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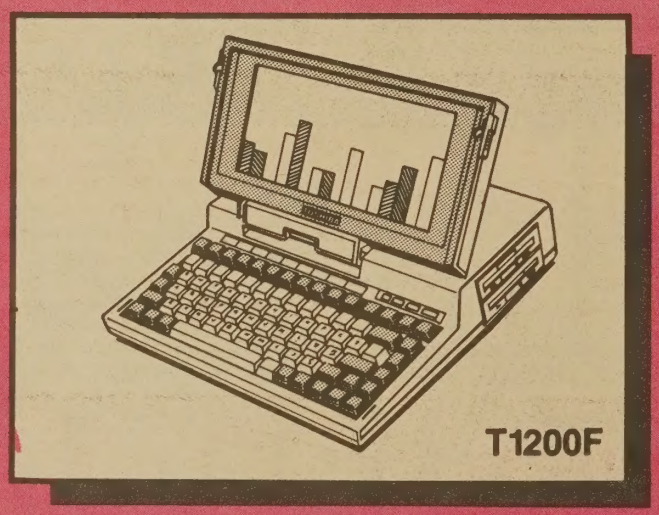

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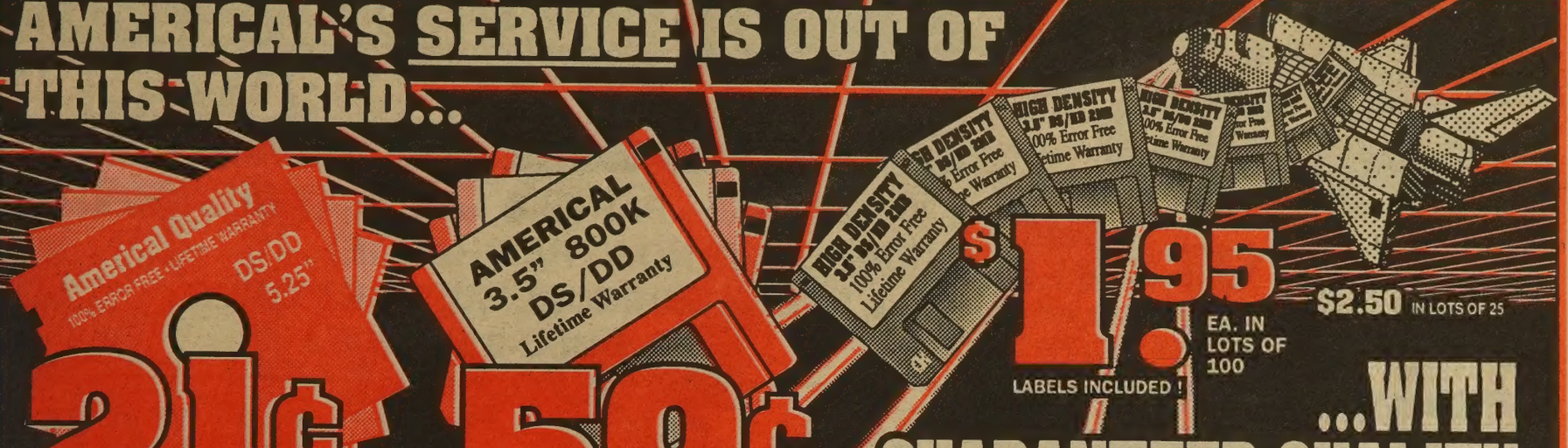

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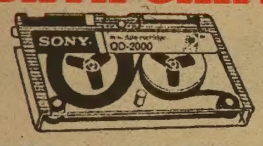

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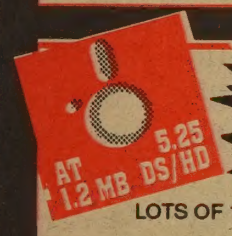

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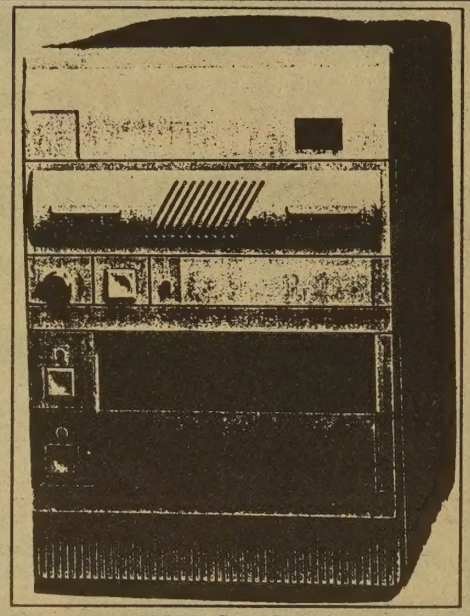

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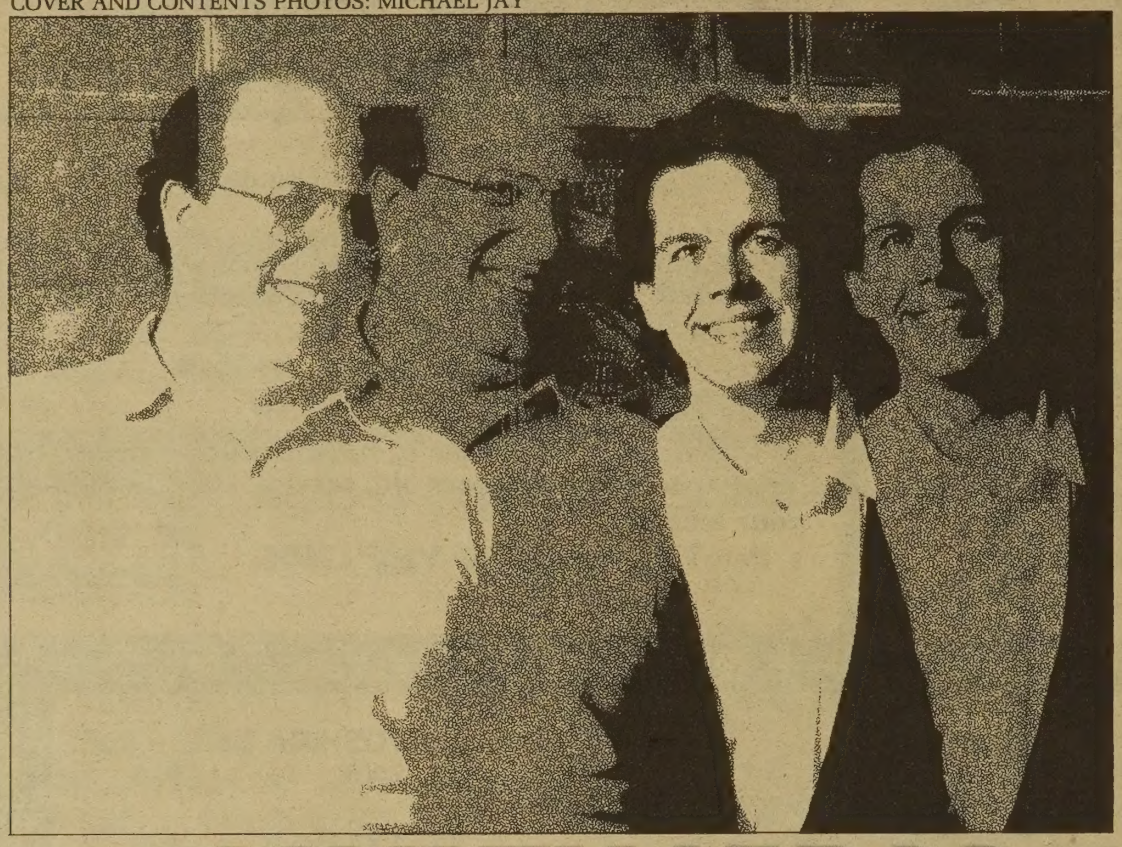

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Next Big Thing, Or Buzzword Du Jour

By Mary Eisenhart

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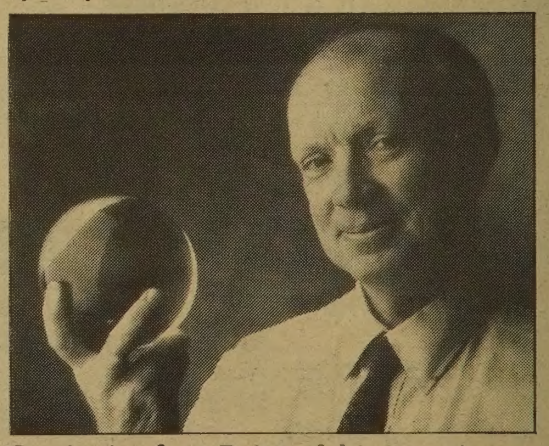

Continuing from Part 1 of this interview, McKenna explains changing and evolving hight tech markets, and offers some insights on how to take advantage of them.

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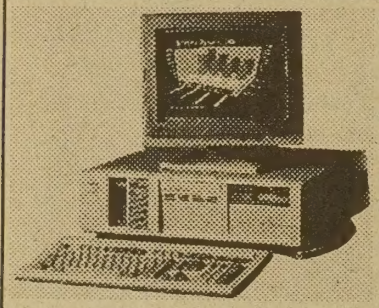

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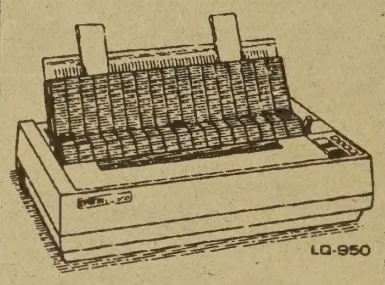

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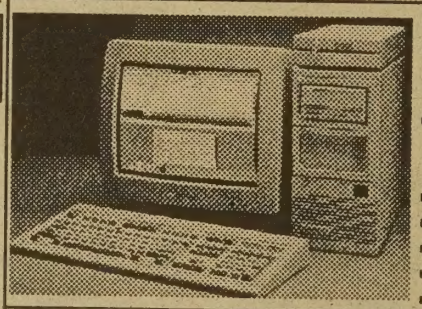

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NEWS AND ANALYSIS

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Apple-Microsoft Again; Tiny Portable From Zenith

Apple-Bashing In the Press: What Really Happened In Court

A few weeks ago, the judge in Apple's lawsuit against Microsoft and Hewlett-Packard said that the only relevant evidence in the suit concerned the features in *Windows* version 2 that were not in *Windows* version 1.

This ruling is not all that surprising, given that the judge had already said that Apple's 1985 agreement with Microsoft gave Microsoft the right to produce and sell *Windows* version 1. The new ruling dealt exclusively with evidence that could be presented during the rest of the trial. Much of the popular and computer press, however, misunderstood the ruling and decided that the judge had somehow ruled against Apple. The ensuing articles sounded like press releases from the Microsoft lawyers that indicated that the lawsuit was all but finished.

To the casual observer, this may have seemed like a devastating blow to Apple since the Apple lawyers made strong statements about the importance of looking at all of the elements of *Windows* when evaluating infringement. However, lawyers always make sweeping statements that sound like do-or-die commitments. Of course, Apple would have preferred that the court looked at the whole of *Windows* version 2: it looks just like the Macintosh and they would therefore not have a hard time showing infringement. The judge simply said that they couldn't do that, since their 1985 agreement gave Microsoft fairly wide latitude in what it could use.

Apple still has a strong case with the use of overlapping windows, the major user interface difference between versions 1 and 2. When *Windows* was first announced (years before it was released), Bill Gates made a big deal about how tiled windows were better and more natural than overlapping windows. Microsoft decried overlapping windows for allowing users to completely hide other windows and to not see what was happening in each window. However, when version 2 was announced, these concerns weren't mentioned.

The big question that remains in the case is whether Apple even owns the copyright on overlapping windows. Certainly, Apple was not the first company to use overlapping windows in a commercial product. Beyond that, it is not clear whether any judge will allow a company to own the copyright to a look that is really more a concept, since concepts cannot be copyrighted.

Other judges have allowed copyrighting of the look of the screen based on the concepts of visual copyrights in the movie and art fields, but this was usually in cases where the accused infringers were trying to look identical. The original *Windows* interface is clearly not identical to the Macintosh interface. Microsoft added many features, such as control menus for windows, and left out many features, such as automatic display of keyboard equivalents in menus.

The most likely outcome of the current case will be an appeal. Apple's lawyers say they have been wrongfully restricted from showing the differences between the version 1 and version 2 interface in the context of all the features and will appeal the current ruling if it ends up losing. Microsoft claims that Apple has never owned any of the interface and will thus most likely appeal if the jury decides that Apple owns anything. As the lawyers slug it out and make pronouncements in court, both Apple and Microsoft continue to slowly change their products to match their perceptions of the desires of their users, while Hewlett-Packard's New Wave languishes.

Zenith Gets Tiny With New Minisport

If what you want is a very, very small portable MS-DOS computer, you can safely assume that Zenith has the answer. The new Minisport weighs less than six pounds and measures only 12.4 X 9.8 inches; with the lid closed, it is only 1.3 inches high. The standard model comes with one megabyte of RAM and MS-DOS 3.3 in ROM (along with a file transfer program). It comes with the standard features of most modern portables: an 80C88 CMOS CPUC, a parallel and a serial port, and an external video port for hooking up a real monitor. It has an internal 2" floppy drive that uses the diskettes that have become standard for still-video cameras. It also has a floppy port for attaching a standard 3.5" or 5.25" floppy drive. The 640 X 200 pixel screen with backlighting is comparable in readability with other larger portables.

The cost is much lower than other super-small PC's: $2,000. Zenith says that it can keep the cost this low by starting with very high production. It expects that the Minisport (and its major competitor, the NEC UltraLite) will be a strong seller due to size and weight problems with most other portables. Zenith is a strong player in the larger portable market and has landed many large government contracts for its portables. The Minisport will help it bolster its low end with a product that is unmatched by any of its major

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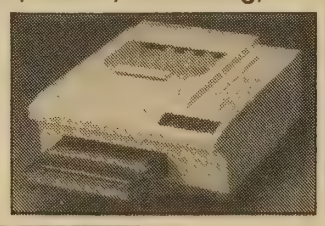

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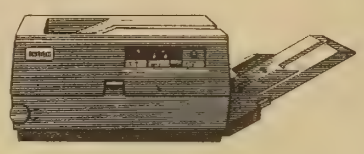

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NEWS AND ANALYSIS

competitors. Toshiba, the strongest seller of portables in this country despite the punitive tariffs placed on it, could come out with a system as small as the Minisport, but is unlikely to be able to begin shipments immediately.

The Minisport's battery should last an average of three hours if you do not use backlighting and all of the machine's ports, according to Zenith. In some cases, the user can get over four hours of use from a single charge. The battery is removable and is recharged externally, one of the ways that Zenith reduced the size and weight of the machine. The 2" disk drive is the weakest part of the package, since Zenith is the first computer manufacturer to use the small format. However, since most of the Japanese still-video cameras that are being released in Japan and the United States are based on the small diskettes, the supply is virtually guaranteed for the foreseeable future. The drives and diskettes are made by two Japanese industry leaders, Panasonic and Sony. Having a single floppy that is impervious to battery loss should be more significant to most users than the currently non-standard size, according to Zenith. Also, the RAM in the system is backed up by a pair of lithium batteries that should last for three days.

Compaq Licenses IBM Technology; Says It Still Won't Build MCA Systems

IBM and Compaq have finally came to an agreement on technology licensing that gives both companies a wide variety of options for using each other's patents. Compaq will pay IBM an undisclosed sum over the course of five years; the company said that the sum is within the amount that it had expected and should not adversely affect Compaq's bottom line.

Industry analysts immediately jumped on the contract as a 180 degree turn-around from Compaq's earlier statements about not producing Micro Channel Architecture (MCA) systems. However, Compaq president Rod Canion said that although the agreement definitely covered MCA, Compaq had no intention of using that technology.

The agreement covered all patents for PCs, peripherals, and "other advanced computer technologies," according to Compaq. An interesting part of the agreement is that it covers all patents up to July 1, 1993, not just current technologies. Compaq said that it sought the license because it felt that it might have already owed IBM money, and also to get access to some advanced technologies that are not being exploited by other clone manufacturers. It is likely that two of Compaq's first targets will be software patents for advanced operating systems that can run on Intel architecture and patents on some chip building processes.

IBM's move to exchange technology with Compaq follows its standard procedures of exchanging technology for technology, not just for money. IBM has already exchanged licenses with many other manufacturers who had non-PC technologies that IBM wanted. The agreement with Compaq was probably the most PC-specific one and thus involved the most money. However, it also gives Compaq the greatest access to breaking away from standard clones into full systems such as telecommunications and networks.

EISA: A Standard In Search Of A Purpose?

Intel announced last month that it has begun shipping sample chips to manufacturers who want to create EISA-based computers.

EISA, you may remember, is the standard that all the major PC clone manufacturers rallied around last year to show their opposition to IBM's proprietary MCA(Micro Channel Architecture) standard. MCA is the hardware basis for IBM's PS/2 series of computers; it defines a different type of bus slot and circuitry for boards that you add to your PC. IBM hopes that MCA will replace the old architecture, dubbed ISA for "Industry Standard Architecture."

Regardless of what Bill Gates says, good old PCs with 8088s and 8086es in them are still selling well. Since EISA only works with 80286 and 80386 chips, manufacturers would have to ignore a low-end market that refuses to die.

Not to be outdone, nine of IBM's major competitors formed a committee to further a new standard, EISA (for "Extended Industry Standard Architecture"). However, it took many months of wrangling to determine the specifications for the bus, and development of the chips needed to run EISA slipped as the committee revised the standard.

Last month, Intel became the first chip manufacturer to supply samples of chips that hardware manufacturers could use to create EISA-based systems. Other chip manufacturers are working on similar sets, but it appears that the EISA chips became much less important to them when the standard dragged on and buyers' desire for EISA systems never materialized. Thus, Intel has a clear advantage in the race to supply the needed technology. In its announcement, Intel said that it expects

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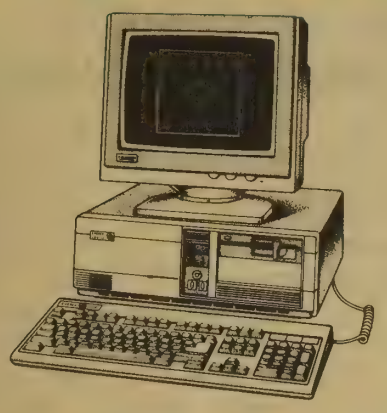

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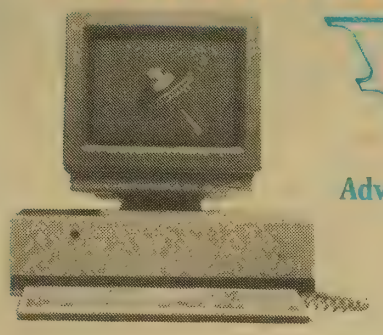

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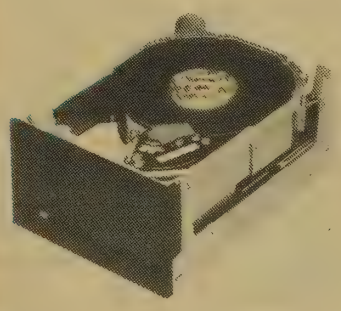

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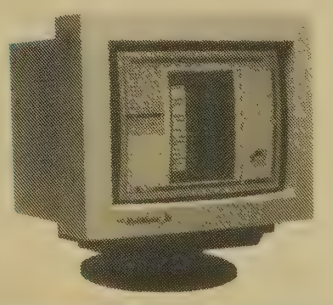

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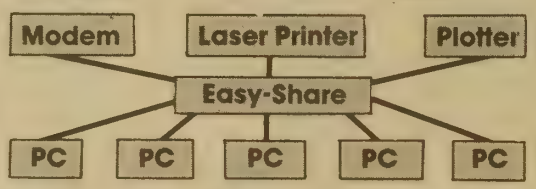

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at least half a dozen manufacturers to be showing EISA-based prototypes at the COMDEX trade show in early November. Many manufacturers, including Compaq and Hewlett-Packard, expect to be shipping EISA-based systems to customers by the end of this year.

Now the big question is, "So what?" Does the world need a third standard for PCs? IBM has sold over a million MCA-based systems, but many buyers say that they would have bought the same systems if they had used the ISA bus, as long as they were from IBM. EISA manufacturers will have the same problem that IBM did when the systems first came out: there are no EISA boards to work with the systems.

The big advantage of EISA is that EISA systems will work with all the 16-bit ISA cards available now. However, since EISA systems will surely cost more than similarly-configured ISA equivalents, why not just buy an ISA system? According to the *Microprocessor Report*, the two competing systems are pretty much the same when it comes to features. EISA has the advantage of accepting ISA boards, but MCA already has lots of boards that work with it. Given that ISA systems are still selling rapidly, EISA would need some big advantages to the buyer (not to the manufacturer) to make it attractive.

Intel's announcement also brought up many issues that have been simmering in the clone market about who should control what. Intel was on the board that decided what EISA would look like; this justifiably irked many other chip vendors. Many vendors had already spent millions of dollars on creating MCA chip sets for clone makers, only to see only lukewarm interest in them.

And, regardless of what Bill Gates says, good old PCs with 8088s and 8086es in them are still selling well. Since EISA only works with 80286 and 80386 chips (and, one would assume, 80486es when they become available), manufacturers would have to ignore a low-end market that refuses to die.

Morris Jr. Charged With Computer Abuse

Cornell University graduate student Robert Morris Jr. was formally charged with preventing use of federal computers by releasing a worm over the Internet network last year. Morris, who was recently suspended by Cornell and has been working as a programmer in Boston, said that he would plead innocent and fight the charges.

Although Morris has admitted that he was responsible for the program that moved over the network, forcing system administrators to shut their machines down and eradicate the program, he denies that he is guilty under the Computer Fraud and Abuse Act of 1986. The indictment came after a federal grand jury in Syracuse, New York, heard testimony from Morris' friends and reviewed records from Cornell's computer system. He could face as much as five years in prison and a $250,000 fine, although it is unlikely that he will serve any time in jail even if he is convicted. ■

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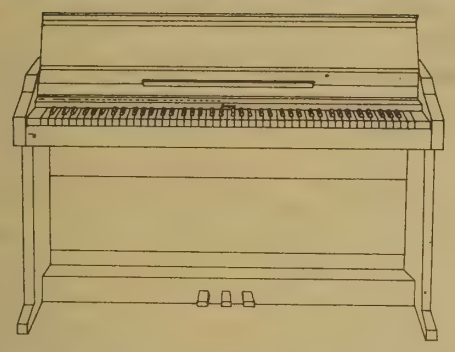

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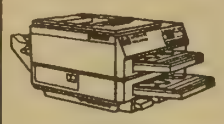

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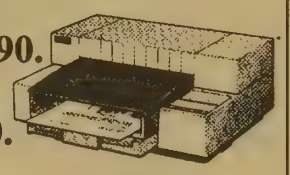

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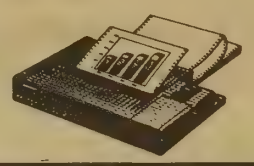

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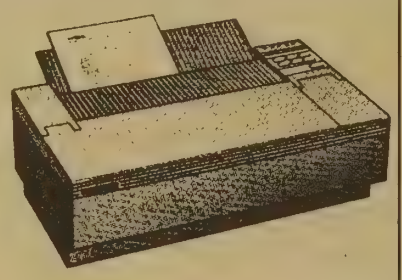

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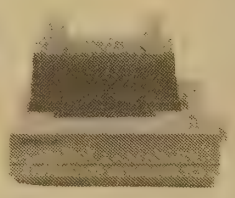

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September 22. Workshop on CD-ROM, Scanners, Faxs, LANs, and HyperText. Los Angeles. Los Angeles Chapter of ASIS. Call: Judy Roswell, (213)812-5365.

September 22 AppleFest. San Francisco. Cambridge Marketing. Call: 1-800-262-3378.

September 23 Computer Show & Sale. San Bernardino. East-West Computer Shows. Call: (415)388-8893.

September 24 Computer Show & Sale. San Diego. East-West Computer Shows. Call: (415)388-8893.

September 26–28 Distributed Systems Conference. Santa Clara. Dataquest Incorporated. Call: (408)437-8245.

September 30 Computer Marketplace Show. Long Beach. RK Productions. Call: (408)978-7927.

September 30 Computer Show & Sale. Pasadena. East-West Computer Shows. Call: (415)388-8893.

October 2–4 Human–Computer Interface Development: Techniques And Tools Short Course. Los Angeles. UCLA Extension. Call: (213)825-3344.

October 3–6 OS/2: A Comprehensive Hands-on Introduction Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800 421-8166.

October 7 Computer Marketplace Show. Pomona. RK Productions. Call: (408)978-7927.

October 8 Computer Show & Sale. San Bernardino. East-West Computer Shows. Call: (415)388-8893.

October 14 Computer Show & Sale. Ventura. East-West Computer Shows. Call: (415)388-8893.

October 15 Computer Show & Sale. Lancaster. East-West Computer Shows. Call: (415)388-8893.

October 16 Javelin Introductory Seminar. Los Angeles. Mentor Technologies. Call: 1-800-227-5502.

October 17 Javelin Advanced Seminar. Los Angeles. Mentor Technologies. Call: 1-800-227-5502.

October 17–20 Microprocessor Software, Hardware, & Interfacing: Hands-on Introduction Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

As a community service, MicroTimes lists trade shows, seminar, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month, two months before the coverdate of the issue in which you'd like it to appear (i.e., the deadline for the March issue, distributed during February, is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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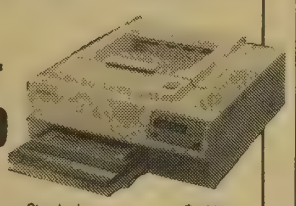

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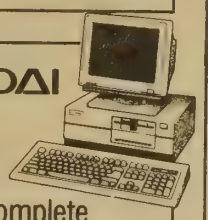

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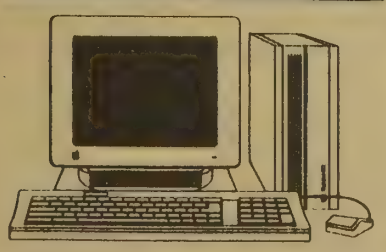

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REALIZABLE FANTASIES • BY JIM WARREN

Phone Books On CD-ROM?

This concerns what isn't, but could be. Do it!

Building A Better Phone Book

Roy Baker of San Francisco has sent an idea I really, really like: phone companies should offer CD-ROM phone books. With appropriate software, they could be enormously more useful than the current unwieldy paper monsters.

From the phone company's viewpoint, producing the disks in phone book quantities: press costs should be much less than printing paper books. Distribution costs would be radically reduced. Much larger areas could be included—perhaps all the Bay Area or LA area on a single CD?—meaning lower demand for directory assistance operators.

Pay phones with appropriate displays could retain unmutilated directories. With appropriate dialing software and modems, misdialing could be greatly reduced.

For buck hustling, black-and-white and color advertising and graphics could be included in the "Yellow Pages," along with much-enhanced search support (all making it more marketable to advertisers).

Beat The Phone Co.

We may not have to wait for Pac Bell to creep up on the idea. If I remember California PUC phone tariffs correctly, one of their little-publicized rules requires that the regulated local operating companies make their phone book listings available on magtape for a reasonable fee. This may permit any entrepreneur—who wants to sell useful databases and/or much-enhanced advertising (reaching computer-using, upscale "readers")—to jump in and offer a truly modern phone book.

Files & Fax

Kenneth Clark, from Beyond Software & Engineering in Garden Grove, sez: Faxboards transmit at 9600 baud and are cheaper than 9600-baud modems. Let's feed ASCII and binary files (or compressed files) directly through the faxboard's 9600-baud transmitter, and snatch them directly from the receiving faxboard's 9600-baud receiver—after it does the error detection and correction.

Faxboard makers—add the necessary hooks, and catch more market share.

Copyright © 1989 by Jim Warren. All rights reserved. *Jim Warren founded the West Coast Computer Faire, the* Silicon Gulch Gazette *and* Infoworld *newspapers, Video Initiative and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

Earsight

A dusty letter of long ago from "a UC-Berkeley Computer Center employee" suggests a possible aid for the visually impaired, which was suggested by two of his experiences: via sound images, while listening to binaural music and interviews on earphones, he "saw" where the instruments were placed and where those speaking were located. And for about $30, he bought some stereo headphones with microphones pointing out of each ear.

If an ultrasonic beeper were placed on the head, and the microphones would sense ultrasonic bounce-back off of nearby objects (and lower the frequency down to human hearing range, with circuitry to block the original beep), perhaps blind people could get a sort of audio-radar image of their immediate surroundings.

Note that ultrasonics may have better imaging properties than audible sounds.

For Teachers, Industry, And The Future

Everyone would benefit if computer companies offered teachers full-time, three-month jobs each summer, as suggested by People's Computer Company founder Bob Albrecht.

Teachers could then learn current computer developments and business realities—good and bad. This could be particularly valuable for teachers with little or no technical background and no business experience. It would also provide a valuable change of pace from daily classroom pressures.

And, by thus working a full year, teachers would have an income more comparable to that of other professionals who work year-round.

Computer Companies Also Benefit

Teachers can provide often-needed fresh insights; after all, they are the society's foremost "knowledge workers." Good teachers are experienced in communicating new concepts and complex information to naive and uninformed "users," and motivating their learning and use of "information tools." They have invaluable insights into the abilities and limitations of about-to-be young adults—the dominant user-base for many companies' products and services.

Such insights are essential for user interfaces that are truly user-friendly. Many companies would benefit from having professionals from the massive "education market" become more familiar with their company and its offerings.

Such summer employees might also fill in while regular staff take their several-week vacations, without the problems of many "temps" nor the other problems of filler-employees who actually want long-term jobs. Over time, such summer employees would also form a cadre of already-trained part-timers upon whom companies might call during the "push periods" that are so common to our wildly cyclic industry.

Benefits For Kids And Society

Most important: It is clear that our societal and national future depends on how well we and our children learn to participate in the post-industrial Information Age. Teachers must be offered opportunities to experience and become comfortable with using information tools—and understand their limitations. Teachers can only teach what they themselves understand.

For our well-being, teachers need experience in the business and technology worlds that compose major segments of our society and future—and their 8-1/2 month work-year offers that opportunity if industry will take advantage of it.

Equally, business and industry workers need more contact with our educators than is possible through occasional PTA meetings, etc. Working beside teachers each summer can have mutual long-term benefit—for their business is our future.

Quickies

Bob Albrecht also suggested that computer pros should have paid release-time to do volunteer work in schools—an idea of great long-term benefit.

What ever happened to cold fusion? For that matter, what ever happened to solar-voltaics? I want my beach blanket laptop. (How many solar-voltaic patents are now held by oil companies? How many solar-voltaic researchers are now employed by an oil company or its wholely-owned subsidiary?)

Trying to screen and interview for good data entry operators or word processors? The Computer-Assisted Management Society will send you four pages of suggestions, if you send 'em a self-addressed, stamped legal-size envelope (Box 82092, San Diego CA 92138).

Anti-attorneys? A friend commented that—after being burned by three different attorneys for whom he did work—he now refuses to work for *any* attorney. Interesting. (It's bemusing to have physicians and attorneys coming to me at parties, saying, "I need some advice about a computer." It's tempting to say, "See me in my office, tomorrow" or "Here's a teaser, but my consulting rates are $150 per hour.")

Don't like current politicians? Support current initiatives that limit terms of office to two or three terms, and take 1990 redistricting out of the hands of the incumbent Legislature. (Permission herewith granted for technologists to participate in our governmental process. Free, at last!)

Visions Solicited

Send suggestions to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. ■

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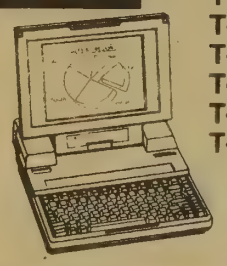

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Regis McKenna: The Future's Bright

By Mary Eisenhart

In last month's issue, PR wizard, venture capitalist, and all-round industry architect Regis McKenna discussed the unique nature of the high-tech industry and how, as he explains in his book Who's Afraid Of Big Blue, *the monolithic approach that was IBM's historic strength doesn't work so well in the innovative, fast-moving, constantly changing environment that currently characterizes the industry.*

This month he talks about strategic alliances, niche markets, and other key elements of success in the high tech world of today.

A point you make in the book is that one of the factors compounding IBM's problems was that it was constantly having to drag along and support a huge installed base of stagnant technology, which placed a lot of restrictions on research and development because they essentially had to retrofit everything.

Right.

At the same time, the concerns of an installed base are real—if a guy's invested a couple of million dollars in software, he isn't going to want to throw it all out. But again, the company's got to make a decision at some point about when to cut the old technology loose because it's consuming too much for what it's producing. When are you going to cut your losses?

Well, it's not just cut your losses, but to integrate. IBM has one of the most formidable research organizations, but they sit in the back room waiting for things to happen, rather than working with customers to solve that very problem—how do I integrate more diversity into my environment?

I just had breakfast two weeks ago with probably one of the largest purchasers of computers in this country, and I said, "Tell me what brands you have in your shop." Well, he just went through the whole host of everybody. He's got IBM, he's got Unisys, he's got DEC, he's got H-P, he's got Suns, he's got Compaqs, he's got lots of clones, he's got some Macs. What he's doing—he's doing the integration work.

PHOTO: TOM ZIMBAROFF

What's in the cards for high tech? Quite a bit, according to Regis McKenna

"Integrating diverse environments today is where the world is moving, and certainly people are solving those problems. But IBM tried to control a monolithic world, and as a result, I think, came late to trying to solve that problem."

IBM could've created more diverse environments for themselves by creating better technology here and solutions here, and then letting their R&D work on that problem. Because the world is solving that problem now. Integrating diverse environments today is where the world is moving, and certainly people are solving those problems. But IBM tried to control a monolithic world, and as a result, I think, came late to trying to solve that problem. As a result their customers were already filling up their shops with other pieces of equipment.

I don't think they could've foreseen, and they clearly didn't foresee—they didn't believe that the PC was going to do what it did to them, or that it would drag MIPS away from the mainframe. But once confronted with that—it's like being in the middle of a sandstorm and trying to figure out what direction you should go to find safety.

I'm not minimizing IBM's difficult decision to do that. It's just that I think in certain segmented markets, there could've been a strategy—"we are going to move beyond that base." Because that new technology creates a whole new base. It did with minicomputers. It did with personal computers. It has with laptops.

So when you go back to the idea that the technology creates a market, the idea, I think, at IBM, is that the use of computers is just an extension of the old computer market. It isn't. The new technology is bringing new users. Fifteen years ago, even in these technical companies in Silicon Valley—and I worked for hundreds of them—you would not find engineers working at computers. Today, you don't find an engineer who *doesn't* work at a computer. What created

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"The idea, I think, at IBM, is that the use of computers is just an extension of the old computer market. It isn't. The new technology is bringing new users."

that marketplace for computers for engineers? High-powered workstations.

And engineers looking at them and saying "Wow! Look how much more work I can get done faster."

Yeah, and it wasn't an extension of the mainframe. It wasn't just a "Well, let's give a terminal to the mainframe." That isn't what created that marketplace, it was a whole new generation of technology that created that market.

I get the impression you think IBM's adoption of SAA—"hey, we've been doing business for 60 years, let's make our machines talk to each other!"—is a classic case of too little too late.

It was a reaction to the marketplace. If you look at DEC and H-P and all the other companies that are out there, they're all talking about moving into multivendor environments. And all that talk, and all the diversity that exists, IBM made the choice.

At one point IBM said, "Well, they may be putting one or two machines in there, but listen, they're just doing that to keep us honest, and they won't get much ground anyway."

But what's happened is that the MIPS are moving away from the mainframe to smaller machines, and there is more investment in the personal computer now—the whole low end is certainly a larger market than the mainframe marketplace. The lower two-thirds [minis and micros] is growing faster than the upper third. And as a result they've realized that they can't go it alone in that environment, they're always going to be in multivendor environments, and multivendors are all saying "Hey, we'll work with anything! We're customer-oriented! We're customer-driven! What do *you* want us to do? Want us to hook up to this thing? We'll work on it!"

Well, now IBM is going to everyone and saying, "Don't work with those other guys, we'll connect all our stuff together." It's still this mentality of trying to fight the multivendor environment by saying you can be an all-blue shop. And the world isn't that way any more. People are going to buy what they need to solve their specific problems, and then try to get these things talking to each other. And they're not going to buy one of all levels of computer from anybody. There's too many options.

Too many options can also breed chaos, though—hence the importance of standards.

Yeah, but there's too many standards too. We haven't reached that toleration point yet. It's a double-edged sword. On the one hand, the more standards there are, the easier it is for people to get into the business, because they know what standard to build to get into it. As one engineer told me years ago, all these standard things, interface and everything else, were major issues—"What do I do? If I don't pick the right one, I'm out of business." But today I can say "That one, that one, and that one." I can put them into my machine, and I can at least tell the guy, "Hey, I can conform to your standards." Plus the chips and software are all built around a standard, so as a result it's cheaper and easier for me to get into the business.

So it opens up the world for more competitors in the the computer business to have more standards. But on the other hand, it's hard to differentiate yourself when everybody has the standards, so that makes it hard to market, too.

And the other thing is, yes, it's confusing, because the standards keep changing. Which standard? OS/2? Well, obviously when it first was announced, all the analysts said "Well, that's it. Boom! The world's going to be OS/2." Well, things have changed since then. I remember watching the pie charts—it was really interesting, watching the pie charts on OS/2. When it started out it was going to be 50-60% of the marketplace, and each six months that pie chart gets smaller and another standard fills in. Not a lot of them, but UNIX gets a little bit bigger, good old DOS will hang in there for a while, so the pie chart of OS/2 gets smaller. And the longer it is, the smaller that pie chart is going to be.

Do you have any comments on the future of the NeXT in view of its Businessland alliance?

Sure. I talk to Steve, he and I are good friends.

First of all I think we have to be careful, because of Steve's unique personality—he is always trying to drive the leading edge—that our expectations for him are well calibrated. Steve starts a company, and people say "Gee whiz, there's a zillion-dollar comapny."

To build a computer company takes time, and I don't think Steve has any false notions—this is not back in the days of the beginning of the personal computer again. There's many more competitors out there, it's a tougher marketplace. You've got to maintain that leading edge, but you've got to do a lot more things too. You have to build good solid sales organizations, there's not a marketplace that is almost infinitely growing that will buy lots of things, like the early days of the PC.

He's shipped quite a few of the machines; feedback—I've talked to some people—is very, very good. I think that he will continue to refine the machine, continue to build the software base for it; NeXTStep is providing an opportunity to do that.

I think now he's opening up the ability to take this through Businessland, which is a real high-end, high-quality sales organization. I think all Steve's moves have been thought through, and I think he's doing, really, a superb job. The only thing that might be out of line is people's expectations of him, and that's often hard to control. I think that NeXT will be a real contributor to this whole area of powerful workstations.

A lot of UNIX vendors we've talked to, most of them with their own in-house sales organizations, are skeptical about the ability of the dealer channel to provide adequate UNIX expertise and support.

Not necessarily. I believe, in the case of Businessland, more than half, maybe 60%, of their sales come from their outbound sales organizations. Businessland services major corporations. Businessland is intended to be more [oriented toward] selling systems and integrating them into a corporate environment. They've done a pretty good job of that. I'm pretty sure that's Dave Norman's objective with Businessland, to allow them to be the premier systems sales organization in the country, if not in the world, and I think Steve's selection of that is very good for him, because it would take him a long time to develop that kind of expertise. You have to hire prople, train them, teach them how to find business.

You can design a computer in two years, but it takes five years to get a sales force effective.

Especially when you're dealing with sophisticated equipment that's constantly changing.

That's right.

One of the big complaints you hear from people who just want to buy and use the tools is that they walk into a store and encounter salespeople who are maybe moving over from another retail environment and don't know the products. And it's hard—you can't go in cold and explain to people what the difference is between 1-2-3 and Quattro.

I think the other thing of building a sales force is the problem of this "other," and that is that there are so many vendors out there, all of which have their own few salesmen, that it's hard to get a large body of qualified salespeople together.

See, this was easy in IBM's day, in a way. When you're the only game in town, you're the leader in the world,

"Mitch Kapor was not a software expert. Mitch Kapor, with a tool in his hand, created a company. I think that the ability to put low-cost design tools and idea generators into people's hands—we don't KNOW what will come out of that. It could be an infinite amount of chaos, but it could be a lot of solutions to problems too."

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you can attract all these people. But whenever you have 5,000 computer companies in the low end out there, all attracting people, then you fragment the sales organizations as well. Whereas a Businessland, that's dedicated to an outbound talented sales force, they can concentrate. It's this concentration thing, this focus thing, that's important. So they can go out and hire people specifically for those tasks.

The problem with the people in retail in this business is that they tend to sit behind a counter. Where their hands-on knowledge comes from is if they're real hobbyists and they go home and tinker and all that. Whereas if you are an outbound guy, who's basically an integrator, you're out there with a customer solving a problem, so your hands-on experience is real. It's not from behind a counter, it's from under a desk.

We had a problem here with one of our systems smoking, and a guy came in crawling under the desk and everything. So you really see what's going on, you understand, and you learn from doing. Which is the primary mode of learning in the computer business, learning by doing.

One of my favorite quotes in the book was from the chairman of Cray, who said "If we can maintain the quality of our business, that's all that counts. Size doesn't count. We can manage the company to whatever size it needs to be in order to satisfy that basic thing—what we do is make the world's fastest computers."

It's great because it flies in the face of the great American grow-or-die myth. Apple, for instance, thinks its survival depends on becoming a $10 billion company. It sounds like what you're saying is that success depends less on becoming a certain size or attaining critical mass than on knowing what you are and doing it.

And owning a market.

If you go back and really look at the innovators in America, they lost that innovation to people who said the most important thing is owning a market, not making innovation. Japan did not invent televisions, VCRs, radios, transistors, semiconductor memories—you name it. They didn't invent any of that, but they own the markets for them. They own the markets for most of the products they didn't invent. And so what they focused on was "How do we satisfy the customers in a particular marketplace and own that customer?"

What we focus on is strictly the continued growth and innovation and everything else, and don't realize that the most important thing is not that growth, but that you grow by continuing owning markets. Intel, if you will, shipped the most memories at one point, but they obviously didn't own the market, because they lost it.

Lotus owned a market once.

Sure. Whatever. And so the important thing is not just the innovation, but also market ownership. As you grow, and you're big, you think about size and growth and all of these major factors, and you forget that most markets start very small. Desktop publishing started small. The automobile started small. Telephones started small. Everything you can think of in technology started as a very small market. And the innovation is what made it grow.

Take the automobile. The automobile started as a hobbyist device, just like the personal computer. It was only the people who could sit under this thing on weekends and tinker with it and knew all the fine adjustments. And as the technology grew, as you took the crank out of the front and you got more of an automatic starter and put the starter inside and went to automatic transmissions—each of those innovations expanded the market.

Just like the personal computer. Very few people used these things when there wasn't a disk drive. It was a pain. It was really tough. And so as the innovations come, as the technology becomes more transparent, the market expands. So you've got to understand that it isn't just the growth, because growth will lead you to say "Build the same thing, and masses of it."

The Tramiel approach.

Yeah. And in fact the way you grow is these incremental innovations that create new markets. And then make sure you are continuing to own that marketplace through those innovations.

I don't mean to minimize growth, because it allows you to bring in new people, bring in fresh ideas. It allows you to reward people, give them promotions—it's part of the whole philosophy of keeping a company exciting and moving new innovations. But when you focus only on growth, you lose sight, I think, of the smallness of the customer. The customer becomes lost, and generally most successful markets are comprised of small groups of customers. It's particularly important in the computer industry, because all computers are sold by word of mouth.

In all the seminars I give, I ask the question—and I've done this from Tokyo to London, to literally tens of thousands of people—"Have you ever been asked the question 'What personal computer should I buy?' or have you asked that question?" Virtually 100% raised their hands. And

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"...there's no next-time purchase of a computer for a lot of users. And if there *is* a next time, you want to make sure that that first investment leverages your second time. With computers, you're always buying a piece of the future."

then I asked the question, "Have you ever been asked the question, or have you asked, whether you should switch from Pepsi to Coke?" Virtually nobody raised their hand.

The difference is that when you buy any complex technical product you need more security. You need expert advice, even if it's a friend who you think knows a little bit about it. Whereas consumer, there's no risk. It's fifty cents or a dollar, and you're not risking anything. You don't have to interface with this thing.

"Personal" has a lot of connotation of "This has a lot to say about me personally. I don't want to go home and feel stupid about it. I don't want to go home and spend hours trying to figure it out 'will it really help me?' after I've spent all this money." Whereas if I don't like the taste of something I bought, if I've never tasted a certain brand of something, I still go home and it doesn't bother me that I don't like it, I just won't buy it next time. But there's no next-time purchase of a computer for a lot of users. And if there *is* a next time, you want to make sure that that first investment leverages your second time.

With computers, you're always buying a piece of the future.

Which you can't see very well.

Which you can't see. You're going to grow with it, it's going to expand, you're going to have new technology, it's going to become easier, you're going to get nice pieces of software that'll come along. So you're always buying something that's out there that's not achieved as yet. So it's a fundamentally different product from anything else we do.

Is there a built-in ceiling anyplace? Is there a foreseeable point at which the growth in high tech levels off?

If there is, I don't know that anybody can foresee it. At least historically, since the integrated circuit came into being in the late '50s, we have seen new markets emerge with every new generation of technology. We've gone from transistors to ASICs, that whole swing of technology, from literally putting one device transistor on a chip to putting a million on a chip. That whole evolution has always seen, in each new generation, a corresponding increase in the number of applications possible.

So I don't know what the future kinds of applications will be. I can only tell you that in 1970 nobody knew that there would be a microprocessor. In 1975 nobody knew there would be a personal computer. In 1976 no one knew there would be a retail computer industry. In 1978 no one knew there would be a laptop. In 1980 no one knew there would be a superworkstation. And as you go up, there always seems to be the technology creating these new opportunities and possibilities that create other new possibilities.

I could certainly conceive of the day that you could put in front of a relative layperson a computer in which you could design anything you wanted to design. You and I could design an integrated circuit. That is certainly not out of the range of possibilities in the next 25 years. When you put the ability to design a complex device in the hands of lots of people, what will result from that? Lots of failures, probably, but also lots of new ideas.

The ability to turn an idea into product reality when you put tools into people's hands—you have 25-50,000 software applications out there. Where did they come from? They didn't come from software experts. In fact the software experts are having a hard time getting their products out. It's been the novice—Mitch Kapor was not a software expert. Mitch Kapor, with a tool in his hand, created a company. I think that the ability to put low-cost design tools and idea generators into people's hands—we don't *know* what will come out of that. It could be an infinite amount of chaos, but it could be a lot of solutions too. ■

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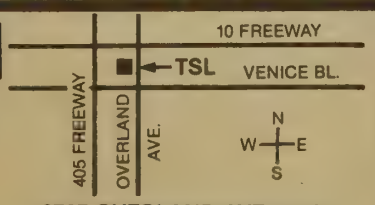

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Art by Rick Probst of Pacific Motion, designed with an Amiga and Deluxe Paint 3.

The Amiga: Hollywood's Best-Kept Secret

Or—Pacific Motion: Two Guys And An Amiga

By Ben and Jean Means

"Art is the ultimate weapon," says Terrance McKenna, and the Amiga running *Deluxe Paint 3* is the weapon of choice for Burbank design house Pacific Motion.

Once the megabuck graphic workstations ruled Hollywood. Designers and producers assumed that serious computer graphics design required a *serious* six-figure workstation. But more is not necessarily better, and Pacific Motion's Rick Probst has found that his Amiga 2000 has all the power he needs to design impressive graphics and titles for film and television.

Traditional cel animation and high-end graphics workstations like the Quantel Paintbox still provide his final output. But before he hires an animator or books time in an edit bay, Probst has storyboarded the look, color, and movement of every graphic element on the Amiga—and saved thousands of dollars in the process.

Storyboards are a set of still drawings that show the key frames in a motion sequence; the director and producer then have an idea of what the finished graphic will look like, so they can suggest changes or approve final production. Only three years ago, when he worked at Cimarron Productions, Rick Probst slaved to produce storyboards the old-fashioned way—with pencils, markers, and airbrush.

Probst was drawing at home on his C64 when he first realized that computers could take the drudgery out of tedious storyboarding. But his bosses at Cimarron wouldn't fund his idea, so Probst turned in his resignation, bought an Amiga 1000 and founded Precision Image with producer Robert Visty to produce movie graphics in late 1986. Two years later, they teamed up with Barbara Eddy to form Pacific Motion and expanded into television broadcast work.

Robert Visty of Pacific Motion: "The value of the Amiga over traditional methods is that I can execute an idea very quickly and get it in front of someone. People see what they're going to get, they approve things quicker, they make changes faster, more projects get through to completion."

Their Amiga-based design business is thriving, and their credits include promotional graphics and titles for films like *Cocktail*, *Young Guns*, *Can't Buy Me Love*, *Three Men And A Baby*, *Cinderella*, and the upcoming DeNiro-Fonda film, *Stanley And Iris*. This fall you can see their designs on broadcast TV with the Disney production of *Chip And Dale's Rescue Rangers*, *Moments To Love*, and *Rollergames*, which will premiere opposite *Saturday Night Live* nationally.

Rick Probst and Robert Visty have

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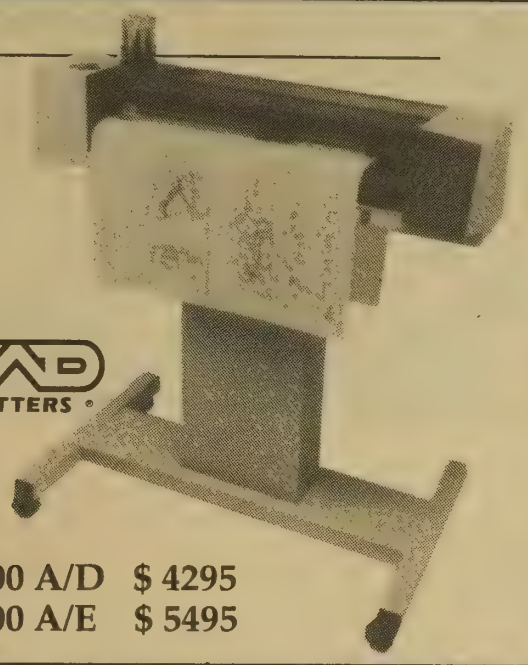

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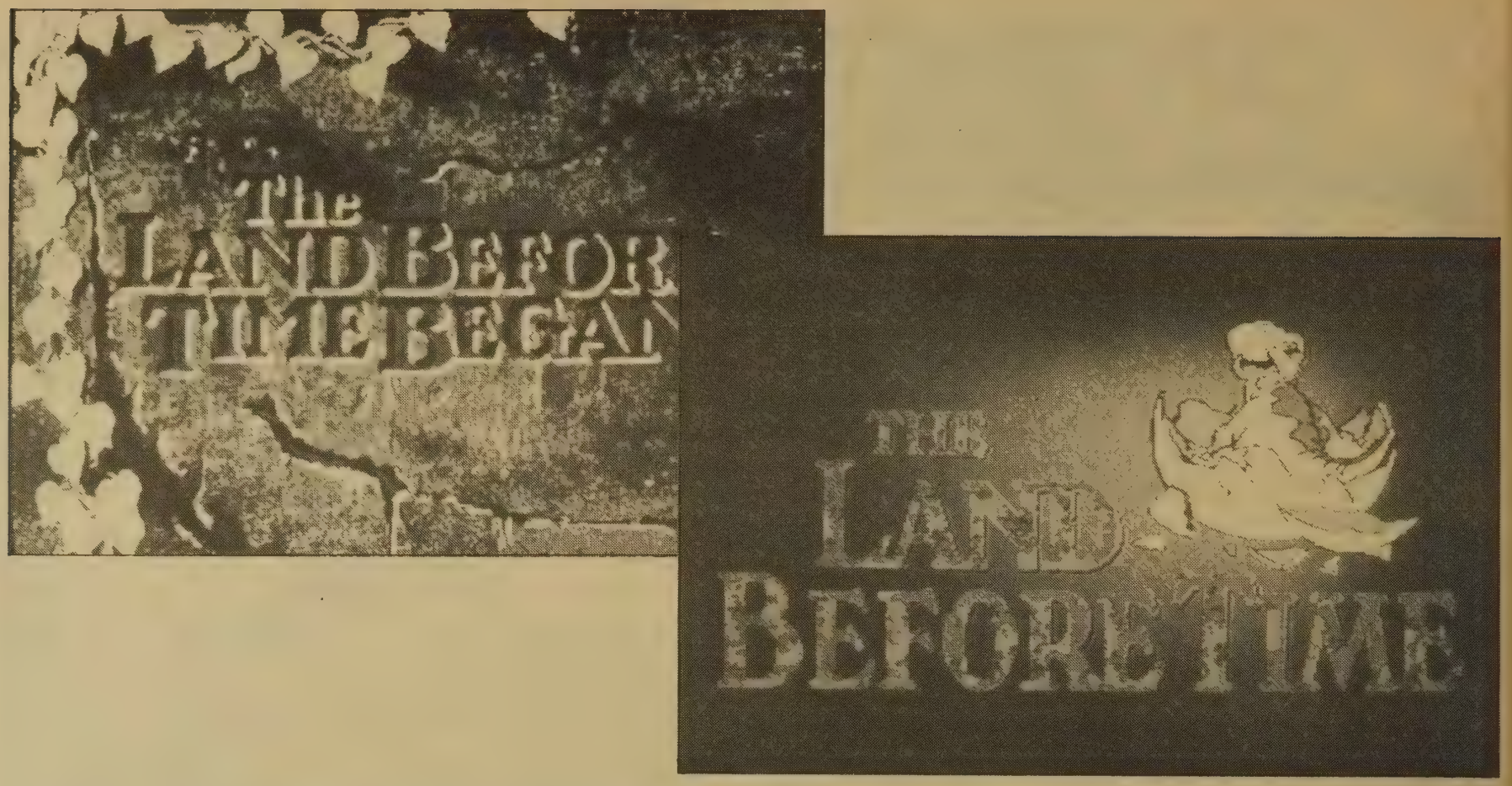

pioneered a new form of storyboarding on the Amiga, and they shared the secrets of their success with us at their Burbank offices.

What are the advantages of using the Amiga for storyboarding instead of traditional techniques?

Rick Probst: Traditionally, designers drew storyboards with an airbrush, color pencils, and markers. One advantage of the computer for storyboarding is that you've got a little of each frame in the next frame and the previous frame. So when you're working with a title zoom, for example, you can change the title's scale and stamp it down over each frame of your storyboard to create the zoom quickly and easily.

If I was airbrushing this same zoom, I would have had to cut friskets for each scale of type and airbrush it. It's slow and tedious. Then if I pull the frisket off, and it doesn't look good or I want to change the color, I've got to put my stencil back together again and start over. It's messy, it takes all night, and you only get one storyboard done.

On the Amiga, I can do three or four storyboards in the time that it took me to do one with traditional methods. If another designer comes in with just one board, and you come in with multiple ideas, then you've got a distinctive advantage. So that's why I got into the Amiga in the first place—because I was doing a lot of storyboarding. I discovered the Amiga was a better way to do it.

Has the Amiga given you an edge in this competitive industry?

Yes, with quicker turnaround time for one thing. From the day of getting a job to delivering airbrushed storyboards, I used to ask for three days and hope that we already had a design idea. With the Amiga, I can usually show the next day, so the Amiga takes two days out of the cycle for rapid turnaround.

In this town, turnaround is everything. They walk in the door on Monday and need finished titles on film by Friday! It's hard, but it can be done. We like to have a little more time to refine things, but often the client needs to deliver product to networks to meet certain time slots or to theaters for a new movie release. So you've got real deadlines that have to be met.

Robert Visty: To sell a design to a producer, you first have to visualize it for him before he'll put a dollar on the table and say "Go ahead and do it." The value of the Amiga over traditional methods is that I can execute an idea very quickly and get it in front of someone. People see what they're going to get, they approve things quicker, they make changes faster, more projects get through to completion.

Some of our clients really specialize in last minute changes, so the Amiga has helped us quite a bit there, too. You may have one producer who is working up in Canada while his director may be over in New York. With this system, I have no problem making multiple copies of a printout within minutes and shipping it out overnight, wherever they are. Then everybody can get on the phone and they're all looking at the same thing. If you're working with an illustrator, you have to send it out to have it shot, get the negatives processed, extra prints made—you lose at least a day. The Amiga removes that time loss from the process and helps us move a project along.

As a producer, I love the Amiga because when I budget a project, I know all my parameters beforehand. So I have no problem budgeting something, and I have no problem bringing it in on time, which is 50% of keeping your client satisfied.

You use Deluxe Paint for most of your design work. How have the animation capabilities of DPaint 3 changed how you do business?

RP: *DPaint 3* is just killer. I bought an Amiga to run *DPaint*, and it just gets better and better and better. You'll have trouble finding an animation program this powerful anywhere. I love it. I used it for *Rollergames*, which premieres this fall, and it helped land the account.

RV: *DPaint 2* allowed us to make a still frame storyboard, but *DPaint 3* has allowed us to do what we're calling temp animation, which is a moving video storyboard. Nobody else in the business is doing that.

Using traditional techniques, a moving storyboard costs a lot of money, to hire an animator and rent an edit bay just to get the project to that first stage. So you have to have a client who is already committed to the project.

I don't have to do that. For just our original design fee, I can now create a moving storyboard that the client can take home on 1/2" video tape, or it can be shipped to New York for somebody else to approve. Sound people can start working the sound track to

Visty: "Deluxe Paint 3 has allowed us to do what we're calling temp animation, which is a moving video storyboard. Nobody else in the business is doing that."

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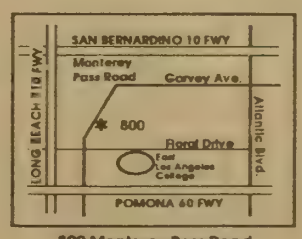

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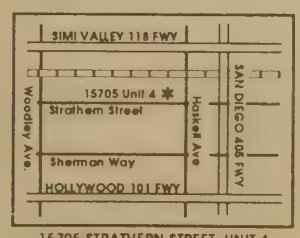

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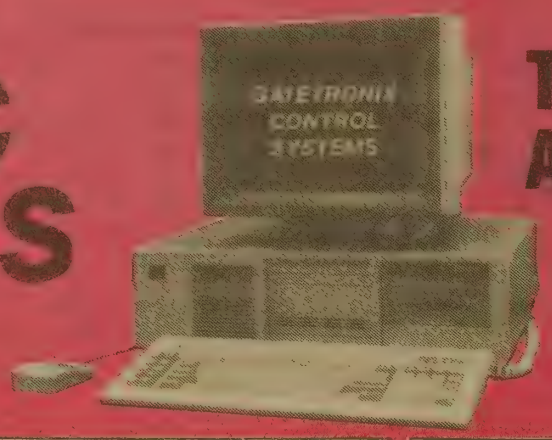

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it, and they can feed back timing or effects changes to me before I go into final production. The creative process gets a little more cohesive just because everybody has something very clear to look at.

So it's moving storyboards on video tape that's really helped us get an edge on our competition.

Once the client approves the storyboards, how do you use these Amiga designs in the edit bay?

RV: You can dump RGB directly into the Paintbox and then just clean up the edges, rather than having to repaint an entire image. With the high cost of production, you can save three or four hundred dollars every two or three hours because you don't have to rebuild your graphic.

Are a lot of the other design houses using Amigas or are they going more toward the Mac II and IBM?

RV: Unfortunately, the Mac II has the predominant awareness in the business. The industry is very aware of the Mac II and all its capabilities, and a lot of people have them. The problem is, most of the programs for the Mac aren't as intuitive as *DPaint*. That's one of the advantages of *Deluxe Paint 3*: the technology is never in Rick's way; it is helping him to apply the design that is in his head.

Is the Amiga better for what you do than a more expensive machine?

RV: Yes; the cost of Mac IIs would greatly affect our creativity. We all have Amigas at home. If I were spending money on Mac IIs, I just couldn't buy two or three of them for each of us. And that is really critical, because the ideas don't stop just because you leave the office. If Rick can sit down at home and spend 20 minutes, a half hour, an hour executing an idea, then it's *done*. I can go sell it; those dollars are in our pocket, we've solved that project and have time to get on to the next one. There's no way that I could afford to have a Mac II on everybody's desk here *and* at home.

Even if you had a Mac II, would that be high enough quality for the final output you need?

RP: Probably not; the difference between 256 colors on a Mac II [in 8-bit color] and 16 million colors on a high end workstation is pretty broad. When you see our product reel, the Iris graphics with 16 million colors and 3,000 lines of resolution look superb. Next to that, 256 colors and 640 X 480 res is going to look pretty limited.

Since it's not for final output, why should I spend the money for a Mac II when the Amiga gives me the design tool I need? The Amiga has all kinds of growth potential, with UNIX support coming out and X-Windows.

The artist in the next office has an Iris workstation, running his own software called Prism. I could create Amiga files of 3D objects in the *Sculpt 4D* ray tracing program, hook up an Ethernet, send those objects to his Vax and render them in about a minute a frame. We've both been busy so we haven't installed the link yet, but once that happens, the possibility becomes reality of actually creating front-end workstation design on the Amiga.

Would you prefer to own your own high-end graphics equipment?

RP: No, that's why we're using the Amiga for design. We're not going to buy an Oxberry downshooter animation system, and we're not going to buy a Paintbox. When you buy a $200,000 piece of hardware, that's what you end up selling. We can sell any piece of hardware because we know where to go find it and use it and get things produced on it. So we can sell any look and do what designers traditionally do—which is solve a communication problem, rather than be constrained by a style or a piece of hardware.

RV: With each project, we take on whatever staff and expertise we need to for that project, and then disperse them. Part of our strategy as a design firm is to remain a design firm; if I own high-end, high-cost equipment like an animation stand or an edit bay, then I'm in the business of selling that equipment and keeping it paid for. But then I'm not a designer anymore, plus I have to work on the machine I've bought.

As a designer, I want to work on whatever is out there, whenever I want to, whereas a lot of post production houses have design teams, but then they're always designing for the equipment that they have.

We'll design something on the Amiga, produce it partially on film, take the film into an edit bay, and do the effects with it there. It gives us a lot of design latitude that other people can lock themselves out of by being tied to one set of machines.

What has the Amiga done for your business?

RP: It's been the ultimate design tool and I'm loyal to it for that. It does everything; when I want to work on an idea, I can pretty well see what it's going to look like. I can do things I just couldn't do before. It's a great decision-making interface, and I think it's going to be hard to beat. ■

Copyright © 1989 by Ben and Jean Means. Ben Means is tired and wants to eschew language in any form, written or spoken. Instead, he plans to have a direct MIDI link bionically installed in his medulla oblongata so he can better communicate with those he knows and loves—synthesizers. Jean Means loves Ben anyway.

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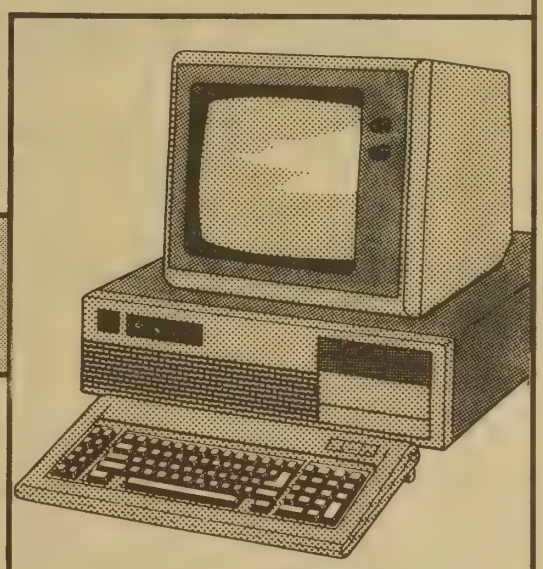

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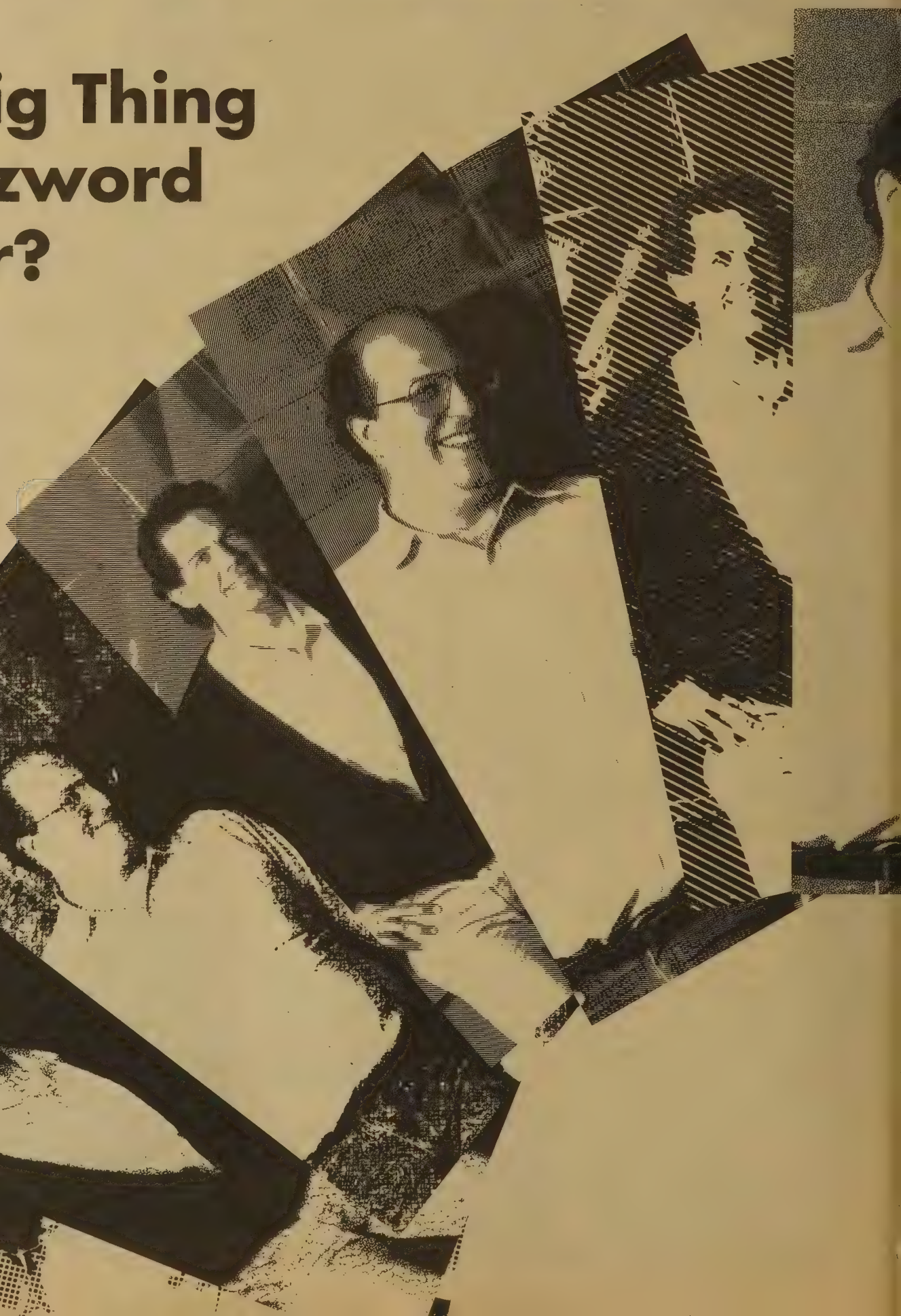

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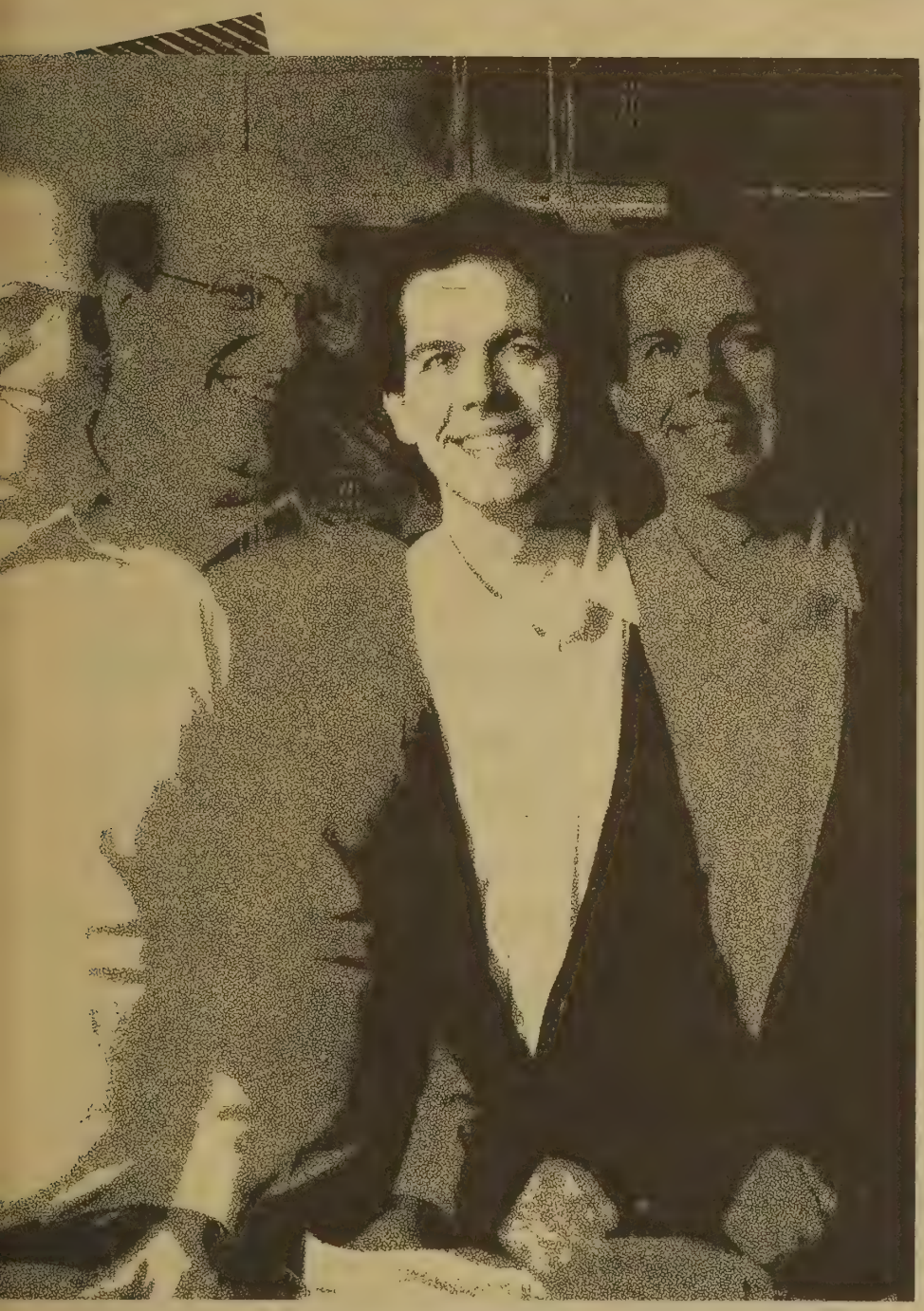

Marc Canter (l) and John Scull—masterminding the multimedia revolution
PHOTOS: MICHAEL JAY

Back in 1981, an event took place that was to have far-reaching effects on the personal computer industry. Marc Canter went to his first SIGGRAPH.

"I saw these incredible visual images," he recalls from the company's spiffy new South of Market digs in San Francisco, "and the soundtrack was a scratchy recording. And then I would go to these audio shows, where people would literally sit in a black room, turn off the lights, and everyone would fall asleep while they're listening to this electronic music. I thought, 'I need to pull these two industries together!'"

This was the heyday of computer-generated video games, and Canter, coming from the entertainment biz and working for Bally at the time, thought he saw an opportunity. So, in 1984, he founded a company called MacroMind and set up shop in Chicago.

"We started MacroMind with one of the world's best programmers," he says, "and one of the world's best artists, and I thought I was pretty good at music. So we were like this elite software rock 'n' roll band. We thought that we would just develop this code, and then we would have all these publishers publish it. In fact, we were represented by the William Morris Agency, this big talent agency. It was like, 'Yeah! creative people can make money at this stuff!'

"That was the illusion we started on."

The original plan was to create development tools for developers of video games. Alas, just as MacroMind was gearing up, the bottom fell out of the video game industry. However, in the interim Canter discovered the Macintosh.

"What we needed was a computer that had a standard graphics model and good sound, because we were looking for a multimedia platform even back then, because we wanted to do all these great video games. The Commodore 64 had hardware sprites, it had color, it had good sound, but didn't have a viable, stable operating

system, and it had a limited memory space. There was just a number of problems.

"A 128 K Mac had twice as much memory as a Commodore 64, so we thought 'Wow!' The Mac to us was the first computer that had the most amount of pixels, 512 X 342. That was, again, 'Wow!' The graphic user interface was *not* why we chose the Mac. That was kind of like the third or fourth thing that we got, and only when we started realizing all these things we could do with a Mac did we really become a 'Mac company.' Before, we were this multimedia video game development company that happened to be using a Mac."

Pursuing their initial vision, the programmers at MacroMind conceived a product called *SoundVision*, which would integrate professional-level music and animation capabilities. *SoundVision* is still vaporware, partly because when its developers showed it to publishers, they were unanimously advised to split it into two products. Which they did, creating *MusicWorks* and *VideoWorks*, which were published in 1984 and 1985 by Hayden Software.

Shortly thereafter Canter had another pivotal experience.

"After the original *VideoWorks* was shipped—it was shipped for $100 as a cartoon-type toy—this engineer from Dupont comes up to me and shows me this animation of synthetic fiber molecules spinning around and forming a helix. It's like 'Whoa!' Suddenly I'm realizing that this stuff is so much more applicable, *way* beyond the videogame world; our sights were just way too small in those days."

However, the road to multimedia nirvana was strewn with obstacles. In 1985 the Mac industry was in serious trouble. Hayden, the publisher of *VideoWorks* and *MusicWorks*, went out of business, and a couple of other MacroMind projects with other publishers came to nothing. Salvation arrived, however, in the form of Steve Jobs.

"Right in the middle there in '85," Canter remembers, "Steve Jobs and Apple had asked us to take our animation kernel, which is inside of our animation program, and spin it off as a standalone player. We created what's called an authoring system around that player, so you would use the authoring system, which is a superset of *VideoWorks*, with a little programming language, to build in interactive code into this document. And the player would both play back that document and interpret the code. We call that the Tour Engine, and starting in January of 1986, every single Macintosh that ships ships with a training disk that shows you how to use the Macintosh. That was created with our Tour Engine, our technology. We entered into a joint development with Apple, so through '86 we developed this authoring system, which is called *VideoWorks Interactive*.

"Well, it turned out that this *VideoWorks Interactive* product was so hot, and *VideoWorks* itself was so hot, that there were many companies who were willing to pay us to use our product to create these interactive training disks. They were also hiring us as a production service to use the product—this is Microsoft, Ashton-Tate, Aldus, there's a list of 30, 40, 50 of 'em now."

By this time, bad experiences with publishers had convinced Canter that his initial strategy was flawed. "The experience had taught us that this whole illusion of a software rock 'n' roll band was bullshit, that you have to publish the product yourself, because no one understands the product better than ourselves." So in 1986 they published a game called *MazeWars*, and in 1987 the new, improved *VideoWorks II*.

Which coincided neatly with the advent of the Mac II and lots of new color software, much of which had *VideoWorks*-based demos and tutorials. "We were doing all these demos for Apple—it was the first time anyone ever saw color on the Macintosh. We're very much associated with the Mac II," says Canter.

Prosperity, however, brought some new problems, not the least of which, as many developers had discovered, was that it's a real problem for Mac developers to maintain the necessary relationships with Apple long-distance.

"For years," explains Canter, "whenever people would ask me 'Why do you live in Chicago?' I would give them this rap, 'Well, you know, if I lived in California I would write software for Andy Hertzfeld and Bill Atkinson. I'd write software for my peers, because these are the people I hang out with. And every time I'd go to the grocery store or the restaurant, I'd have to be careful of what I'm talking about, because who knows who's sitting next to me? You go to Chicago, I've got cabdrivers and waitresses, which are my target audience, and I can say anything I want at any time.' It's very important for us to evolve the aesthetics of the company as writing software for normal people."

However, other circumstances intervened, and Canter became convinced that the impact of multimedia, driven by the Mac II, was going to be as great as that of desktop publishing. Maybe greater. "Desktop publishing showed that there's an ability for one single application market to put a company into business or many companies into business; then there was desktop presentation, which showed that people want to do presentations simply, but maybe slides weren't really where it was at. This is all coalescing around the Mac II, and suddenly people started to realize 'Hey, what MacroMind and VideoWorks and Marc Canter's been doing for years is really where it's all headed.'"

So suddenly Canter found himself deluged with offers to buy his company, and discovered that selling MacroMind wasn't really what he wanted to do. "What I *really* wanted to do was get some VC money or get someone to invest, so I can develop the products I want to develop, get an executive in here who can lead the company so I can go off and make products. The point was, I'm not a marketing guy, and I'm the president of the company, so that's a problem. I mis-priced *VideoWorks II*. I sold it for $195; they bought it for about $112 from MacConnection.

"We felt as though 1989 would be the last year of the window of opportunity for us to really jump in in a leadership position—before it would explode even more and Microsoft and Borland and Ashton-Tate and Lotus would jump in," he says. "And then suddenly the next tier after that would be Robert Maxwell, Rupert Murdoch, Ted Turner, Time-Warner, CBS-Sony, I mean, everyone's going to jump into this thing."

Canter was sufficiently persuasive about the brilliant future of MacroMind that he attracted substantial investment from venture capitalists, first from Cole Gilburne and later from Kleiner Perkins Caufield and Byers. Part of the VC agreement involved moving the company from Chicago to the Bay Area, and also the hiring of a new chief executive.

The eventual choice for president and CEO was John Scull, who'd been on the original Mac team at Apple and spearheaded the company's desktop publishing campaign. "We think this is sort of a dynamic duo, with the two of us," explains Scull. "I've been fascinated by how you use computers for more than just number-crunching, how they should be a tool to help people communicate ideas. I've been fascinated by multimedia, so I spent all last year looking at it; I did a special project for the exec staff at Apple, trying to figure out what Apple ought to do, what the opportunity was.

"I had known Marc for a while. We hit it off real well. He seemed to have a really good complement to my skills, and vice versa. I enjoy marketing and putting together a business, and kind of turning this into a significant opportunity to impact the world. And that's what he wanted to do through products. And so the mesh, the yin and yang, really seemed to work. So we decided, what the hell, we'd try it.

Says Canter, Founder and Chairman of the company's new incarnation, "John's been developing our marketing, developing our sales, getting the company out here. My job is to talk about all the new programmers I've hired, all the great products we're working on, all the great things we're trying to do. I'm still kind of like the spokesman—the guy who goes up and gives speeches. I've got to fly down to LA tonight, did BMUG last night, I'm running around like a nut..."

Marc Canter: "When people think 'What's multimedia, what can it do for me today?", it's hard to differentiate the science fiction of the future and the reality of the present. But there are a lot of things people are doing today with multimedia that save them money, that are more efficient, more productive, and a better communication medium."

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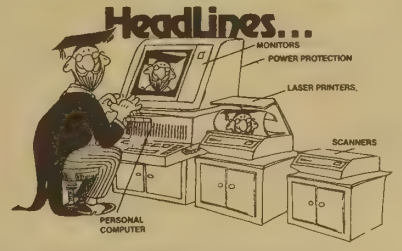

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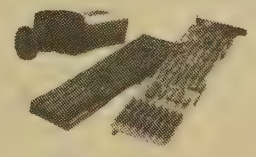

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And in the midst of all this, MacroMind took advantage of the recent Hypermedia Expo in San Francisco to announce all-new versions of its products: *MacroMind Director*, an enhanced version of *VideoWorks II*, and *MacroMind Director Interactive*, an extension of Director, which allows developers to easily create interactive applications. "We hope that people will remember when Microsoft went from *Multiplan* to *Excel*," says Canter. "It's the same sort of thing. It's better, it's easier to use, it's more powerful, able to leap tall buildings in a single bound...."

When we visited MacroMind's spacious new headquarters recently, Scull referred to the Mac II as technology with which "you can do real multimedia today." Which led to an extended discussion of multimedia, what it's good for, and where it's all headed.

Would you care to define what "real multimedia" is?

John Scull: Sure. We basically consider it to be multimedia computing, which is the hardware and systems software, the platform that allows you to work with text, graphics, animation, audio, and video. You have to be able to work with those five media types, and, in our case, to help people communicate using a new medium. We consider this to be a new medium.

We don't consider it to be a market, we don't consider it to be even an application. We see multimedia to be this third wave of computing. The first wave being the kind of text-oriented Apple II, that was good for doing spreadsheets, databases, and word processing. The second platform being the early Macintosh, that now not only did text but also added graphics. WYSIWYG allowed people to do, beside spreadsheets, databases, and word processing, they could also do desktop publishing. Which was new, it was exciting, it was great, rah-rah-rah...

Canter: It could not have been done without the proper platform.

Scull: You needed that platform. And now we see the Macintosh is really maturing, especially the II family. It now has the power, the expandability, the flexibility to be able to work with text and graphics, it's got the processing power to do really good animation, it's got really good sound, and has expandability to work with video in and video out. So now you finally have a really good multimedia platform that's available to the masses.

Canter: When the Mac II replaces the equipment that's inside a video studio, and when you use this stuff for the purpose of putting it onto video tape, we define that as desktop video. Really, the only difference between this and multimedia presentations is that multimedia presentations stay on the screen, they don't go into tape, and they're interactive. Whereas desktop video is for the purpose of generating videotape.

What have been the obstacles up to this point that made it unavailable? What does the Mac II particularly change?

Scull: The hardware and system software. You have great color, the sound's improved, you have slots so that you can have cards to be able to digitizing images in or video out.

Canter: Or video in a window.

Scull: Video in a window for some of the advanced capabilities. You're just now starting to have a much more robust environment. Yes, our products work on a Mac Plus and an SE, with only one meg, and you can do some pretty neat things with it. But we consider the Mac II family to be what most people would consider the best multimedia platform today.

What do you have to say to those no-nonsense business types who would say, "Well, this is a very interesting toy, but what good is it?"

Canter: Let me say one thing to answer that. We just started off by being very careful in defining multimedia. The reason why is because it's

John Scull: "The number-one thing people want in their business life tends to be some kind of control. If you look at it, why do people adopt new technology? We think it's because they're torn between two lousy alternatives."

the buzzword du jour nowadays, and everyone wants to see it as a fad—and you know the way fads work, you associate the word, you put the word "desktop" around there, and...

Now what we do is we say, "Okay, multimedia is a platform."

With desktop publishing, desktop publishing came in and replaced something called typesetting. That's basically what it did—it gave us a few

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extra things, but it's basically fulfilled its promise.

Now with multimedia, it's coming in, and there are a number of markets right now. Multimedia presentations, learning, visualization, and desktop video. I think the key point here, why there's such confusion, is that those are markets that replace something that people are doing today.

But multimedia is much more of an open-ended type thing. Yeah, it's these markets today, it's Jaron Lanier [virtual reality pioneer of VPL in Redwood City, architects of computer-generated environments where devices like the Dataglove allow people to move and interact in cyberspace] and his wacky gloves and stuff in the virtual reality of tomorrow, and it's the Knowledge Navigator in 10-20 years from now, and it's the agents in AI stuff in 30 years from now. It's all those things, because it's the platform that you sit on top of.

So when people think "What's multimedia, what can it do for me today?", it's hard to differentiate the science fiction of the future and the reality of the present. But there are a lot of things people are doing today with multimedia, in fact have been doing for years, that save them money, that are more efficient, more productive, and a better communication medium.

There's so much overload in society today, there's all this confusion—just when everyone figures out how to do slide shows, now there's hundreds of slide shows. Now you need to do something that's better than a slide show.

Scull: People basically have two major problems: they're either trying to sell an idea, to persuade somebody, or they're competing with a lot of other ways that people are trying to communicate for your mindshare. And so they have to figure out a way to do it in a much more effective, higher-bandwidth fashion.

Or they have some idea that needs to be communicated so that you can understand it. It may be some abstract or some complex process that you're trying to communicate.

Traditional media in both cases aren't good enough. So we believe that a new communication medium is needed. That's the essence of what we're trying to solve. What you try to do is really focus on where you can add value. So we as a company are focused exclusively on taking advantage of multimedia computing to help create this new communication medium.

Canter: The key thing is if you want your message to get across, you want to be better than the slide show. You need dancing girls, right?

Scull: We're seeing everything from the engineers and scientists doing it, all the way down to manufacturing stuff, all the way down to medical. Oftentimes it's in almost a learning environment, where they're trying to explain a rather abstract concept. This is a major problem in our society, training people and getting people up to date on new products, new ideas, new skills.

Who are the people and why are they using this stuff? The people we're finding that are using our products basically are professional users, or hobbyists, but in general it tends to be a very professional crowd. We break them into three major categories: the first is communication professionals, people like corporate creative service departments, ad agencies, cable tv—people whose job is to help communicate an idea. Communication professionals—there's lots of 'em, and needless to say that's a real stronghold for the Macintosh.

The second group is learning professionals, all the training people, all the professors, training departments, and things like that.

Technical professionals are the next group, engineers, scientists, medical, manufacturing people.

Before this, the work of simulations and conceptualizations had to be done on workstations. And what we're seeing [with multimedia on the Mac II] is that people are able to do conceptualization of their ideas—to get approval, to do what-if, just at the concept stage—and then later they can go to the CAD/CAM stage when they're trying to produce something. It's the equivalent of doing storyboards for an ad, or for some other type of work that you're doing.

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Scull: Yeah. Why do that? Because normally you want to create it and say, "You're the client," or "You're the boss—do you like it?" Before you go spend $100,000 doing it."

Canter: The other thing is that with expensive hard-to-use equipment, you have to be a programmer or a scientist. In that manufacturing situation, the guy who comes up with the idea, if he's not the guy who's doing it, very often there's a big blowup. That's part of why we named our product *Director*, because it kind of turns you into the person who does everything.

Scull: It gives you control. The number-one thing people want in their business life tends to be some kind of control, I think.

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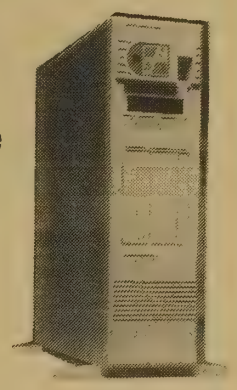

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If you look at it, why do people adopt new technology? We think it's because they're torn between two lousy alternatives. If you're trying to communicate an idea, the low-cost alternative is handouts and overheads and graphs and stuff. The problem with the low-cost alternatives is that they're just not good enough. They're not compelling. It's tough to convey a complex idea. They're tedious and lousy.

Or you could spend big bucks, and you can go get outside services, outside equipment, all this expensive video production. The problem with that is, no control. You're dependent on someone else. You don't do what-if. It costs too much, and you're always at the mercy of someone else's deadline.

Now wouldn't it be neat if something had this kind of [high-end] quality at this kind of [low-end] cost? Now you've got that impact that you're looking for, but it's under your control. Creative control, budget control, time control. That's why people want this stuff.

Canter: You sit at home, and you work on it till it's just right. And then you show it. You're not under this $500-an-hour-omigod-I've-got-to-finish-something-in-four-hours-or-else-I'm-screwed.

Scull: People make all kinds of compromises [using high-end equipment], all kinds of tradeoffs, they don't try things, they don't test things, they don't experiment...

Canter: They aren't creative!

How accessible is this tool, really, to your basic business guy who wants to do a presentation?

Scull: We're trying to make it so it's easy enough for people, a low floor so you can get on board, and then have this really high ceiling so even sophisticated people, real producers and stuff like that, can take it all the way. So you don't hit walls for a long time.

Canter: Nobody complains if *PageMaker*'s hard to use—doing rubber cement and stuff is pretty hard, and *PageMaker*'s a lot easier. For anyone who's done animation, it's the easiest thing in the world; but the problem is that there's people sitting down who have never done animation, and consequently they think "Oh, this is a hard program to use." Which of course it's not.

Scull: What we believe is, if you look at that kind of marketplace, that there's the high end, there's this group we call the industrial producer, and then there's the general office or the casual user. In spreadsheets, where did *VisiCalc* first get adopted? What category of people? It wasn't the real, real high-end folks, it was the financial analysts and the accountants. Nowadays secretaries and sales and marketing managers use it, but it started off as a financial analyst's tool or accounting tool.

Desktop publishing—where did it start? Graphic designers and publishers. Not the high end, not *Time* magazine, it started right here [in the middle]. Nowadays secretaries and marketing departments are laying out newsletters and things like that. But the computer and the software's getting more sophisticated; now you're doing four-color separations, people are doing magazines with it, newspapers are starting to do it, so it's moving up.

Guess where multimedia's starting. It's no different, starting with those professionals that have a need, where this tool is an important part of their business. That's where it's going to start. It's not the ones where it's their lifeline, like someone in Hollywood—those guys will spend half a million dollars, $2 million, to do this. That's not where we're at yet. We're close—in two to three years, I *guarantee* you we'll be there, just like four years later we have four-color separations in desktop publishing. We're going to do the same thing.

Canter: People make money using our product. That is what they do. The people who are making slide shows are the perfect people to come over initially. And in the low-end world, that's where *HyperCard* and *SuperCard* are.

Scull: I contend there's not yet anything down here at the low end. A lot of things still need to happen. The hardware still needs to get a little more plug-and-play, the distribution channels still have to get more appreciative of the opportunity, general market awareness has got to be much broader.

So there's a lot of things. Things tend to migrate down as the whole infrastructure rises. This is no different. This will follow evolutionary trends just like any other market, any other opportunity, whether it was *VisiCalc* or desktop publishing. As the hardware gets easier and people understand it, as there's more training and infrastructure and the dealers know about it, it will move down and people will use it. (MacroMind, 410 Townsend, Suite 408, San Francisco, CA 94107, 415/442-0200.) ■

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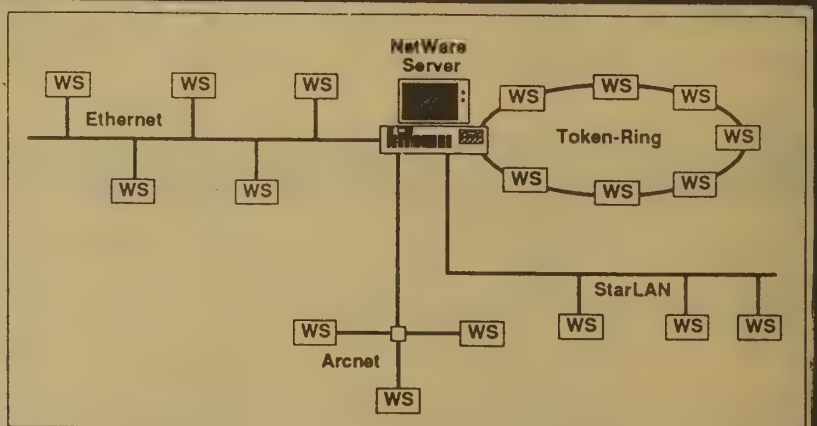

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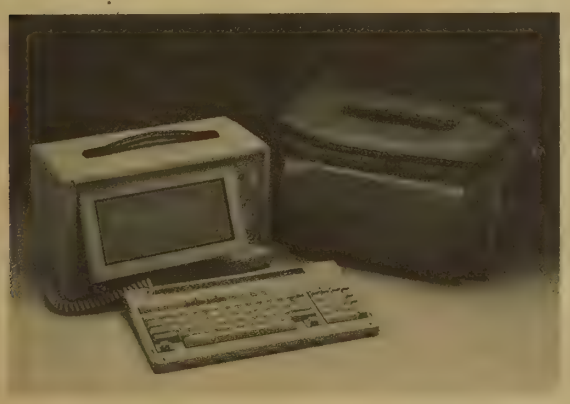

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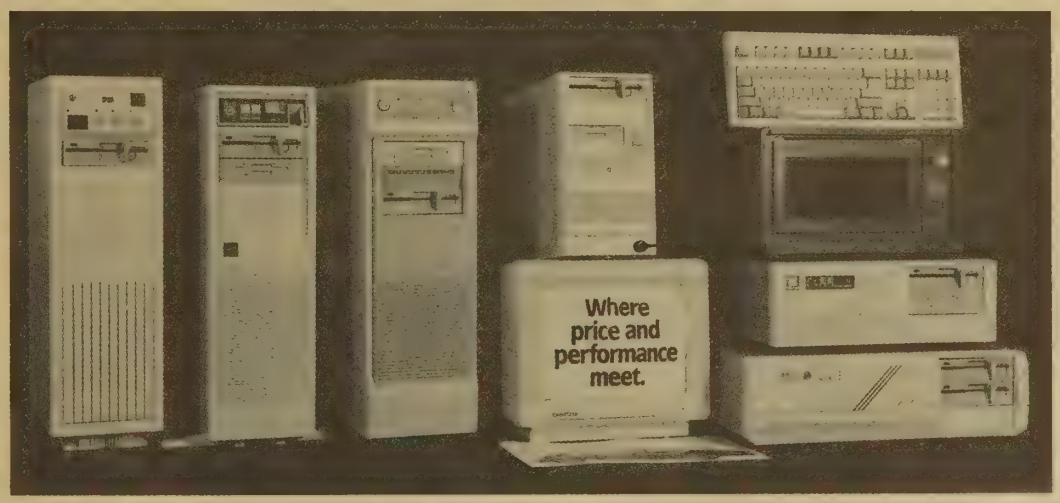

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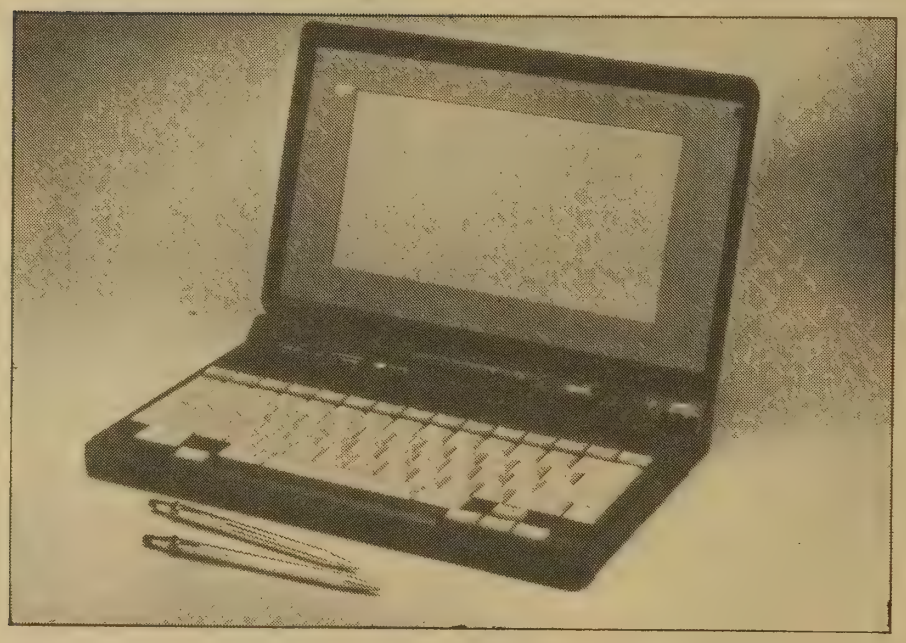
The NEC UltraLite

Ultra-Portability—At A Price

By L. Brett Glass

The first time I saw the NEC UltraLite, I mistook it for a hardcover book. It's just shy of 8 1/2" wide, a little more than 11" long, and about 1 1/2" thick—by far the smallest fully-functional PC-compatible I've seen yet. And it weighs in at 4.4 lbs, two-thirds the weight of the Toshiba T1000 I usually take with me on the road. At first sight, it looked like the laptop of my dreams—so I arranged to borrow one from NEC and put it through its paces.



Standard Equipment

The UltraLite comes equipped with a 9.32 MHz NEC V-30 CPU, an 8086-compatible that runs about 10-20% faster due to architectural improvements. Its standard configuration includes 640 K of RAM, a 2400 bps Hayes-compatible modem, and serial port. The screen is a 640 X 200 backlit LCD that emulates the IBM CGA.

When the system is turned on, it executes a quick memory test and boots a version of MS-DOS 3.30 from ROM "disk" D:. Then, by default, it runs a visual "shell" called the Microsoft MS-DOS Manager. Inexperienced users will like this menu-driven file browser; as a power user, I preferred the standard DOS prompt and disabled the Manager by changing the AUTOEXEC.BAT file.

From DOS, I verified that all the standard MS-DOS utilities were present, plus a ROMed copy of *LapLink* Version 2. (Traveling Software has since moved on to Version 3 of *LapLink;* Version 2 has some bugs—it once hung both machines as I attempted to build a directory tree of the UltraLite's RAM disk.) However, I was able to get files on and off the UltraLite with relative ease.

The Big Disk

One of the UltraLite's nicest features is its 1 or 2 Mb nonvolatile RAM disk, which NEC insists on calling a "silicon hard disk." When I bought my T1000, I equipped it with the optional 768 K RAM disk and was soon wishing for more; I'd filled the entire space with useful applications and data. The 2 Mb on the UltraLite felt much more comfortable, and I found myself using disk-hungry applications (such as *ThinkTank*), which I hesitate to use on the T1000.

The UltraLite has no internal floppy drive. There simply isn't room in the case, and it would probably exhaust the computer's small battery very quickly. Instead, the UltraLite has a slot for a RAM or ROM card, about the size of four credit cards stacked on top of one another. The 256 K nonvolatile RAM card that came with my unit looked just like a floppy drive to the system; I used it to back up files from the RAM disk. Inserting and removing the card with the machine powered on caused no apparent problems. Programs such as Lotus *1-2-3*, Microsoft *Works*, and *WordPerfect* are available on ROM cards, leaving even more room on the RAM disk.

Unlike the T1000, however, the UltraLite does not let you reallocate some of the RAM disk as LIM/EMS (expanded) memory. If you have a program that really needs EMS (*Turbo Debugger* and *Ready!* are the big ones for me), you must use an EMS emulator and pay a speed penalty for doing so.

Backlit Screen

The UltraLite's 8 1/2" X 4 1/2" "supertwist" LCD is backlit by an electroluminescent panel. The power supply in my unit produced a faint but noticeable whine when the backlight was on. The backlight has two settings and an automatic shutoff feature that extends battery life by extinguishing the backlight when you don't press a key for five minutes. Alas, there's no way to turn the backlight off entirely, or on demand, to save still more power.

I found the screen to be quite readable in a darkened room, but utterly illegible in a brightly lit restaurant or outdoors (even in shade) on a sunny day. There's no provision for plugging in an external CGA monitor or overhead projector adapter.

The display has minor compatibility problems with some programs. In *ThinkTank*, which uses a software-generated cursor while editing text, the cursor didn't disappear when I left the editor. This isn't a fatal flaw, but it was disorienting the first time it happened.

One of the UltraLite's nicest features is its 1 or 2 Mb nonvolatile RAM disk, which allows the comfortable use of disk-hungry applications such as ThinkTank, which I hesitate to use on the T1000.

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Thin Keyboard

The UltraLite's keyboard, a minor miracle of engineering, is what lets NEC make the unit so thin. The short key travel takes a bit of getting used to; once I used the keyboard for a while, though, I began to like the feel. Harder to adapt to was NEC's placement of the Ctrl key in the bottom row, instead of to the left of the "A" key; using *WordStar* on this keyboard proved to be a bit of a challenge.

The cursor control keys on the UltraLite are arranged in an inverted "T" pattern at the lower right—a very convenient arrangement. Not so convenient, however, is the way you access the PgUp, PgDn, Home, and End keys; you must press a small "Fn" key (not easily reachable from the home row) while hitting one of the arrow keys.

You can access most of the usual numeric pad functions by hitting the Fn key and pressing keys in the main section of the keyboard. I ran across one keyboard incompatibility in my tests: for some reason, I was unable to produce the Ctrl-Numeric-5 key sequence that pops up in Living Videotext's *Ready!* I had to reconfigure the program on another machine and copy it over before I could get it to run. Also, Ctrl-NumLock doesn't work. There is a Pause key, but by the time you find it it can be too late.

Power Shortage

The UltraLite's greatest weakness is battery life. I spent about two hours writing this article under battery power; before I was done, the computer gave a loud "beeeeeeeep" and flashed an ominous message: "Power fail has occurred." Sure enough, within 10 minutes, the unit turned off and refused to turn on again until I plugged in the AC adapter. (The "power fail" message persisted for five minutes *after* I plugged the unit into the wall, causing me to check the connection twice.) By contrast, my T1000 runs nearly six hours on battery power, and has about 30 minutes of power left when the "Low Battery" light comes on.

It's reassuring to know, however, that the UltraLite's nonvolatile RAM disk is powered by a separate battery that lasts at least a week, so even if you can't turn the machine on your data is probably OK. And, of course, you can always back up your files to a RAM card.

Accessories

The standard UltraLite doesn't include a parallel port. To use a parallel printer (or some other peripherals, like the Xircom Pocket Ethernet Adapter), you need either a special parallel adapter or the optional external floppy disk drive. The latter is battery-powered and uses 720 K or 1.44 Mb 3.5" disks. There's also a very elegant leather case with room for papers and writing implements; I found it very convenient to pull the UltraLite out of this case and start typing.

The Bottom Line

The basic UltraLite lists for $2,999 with 1 Mb of nonvolatile RAM disk; add another $700 for an additional 1 Mb. The parallel adapter costs $199, and the external floppy/parallel port costs $399; the leather case lists for $129. 256 K RAM cards cost $249. As you can see, this isn't a cheap unit. The T1000 with a 768 K RAM disk, a modem, and a built-in floppy lists for less than half as much.

The following software is available on ROM cards: Lotus *1-2-3* for $495; Lotus *Agenda* for $395; Microsoft *Works* for $149; *WordPerfect* for $495; *XYWrite* at $445; and *Metro Express* at $235.

Would I buy an UltraLite? Personally, I don't think so. I'd be deterred by the short battery life, limited screen visibility, and high price tag. But the machine is elegant, and its problems are not insurmountable. With a little work—and perhaps some advances in the technology—the UltraLite could well become the ultimate laptop we've all been waiting for. ■

Copyright © 1989 by Brett Glass. All rights reserved. *Brett Glass is a freelance programmer, author, hardware designer, and student residing in Palo Alto, California. He was one of the original architects of the IEEE 802.5 Token Ring LAN, and co-authored Living Videotext's* ThinkTank *2.0. He currently hosts the OS/2 Conference on The WELL, a computer conferencing system in Sausalito, California. He can be reached electronically as [72267,3673] on CompuServe, "glass" on BIX, and "lll-winken!well!rogue" on Usenet and the ARPA Internet.*

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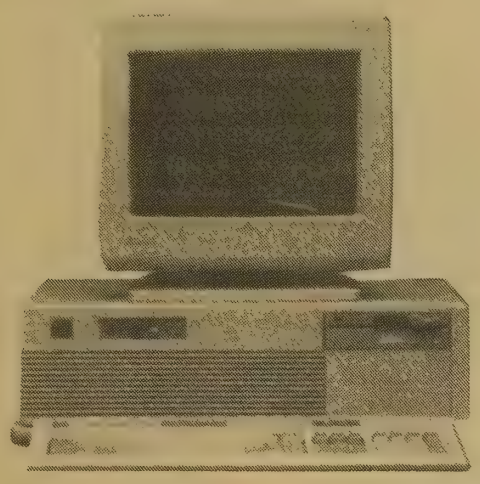

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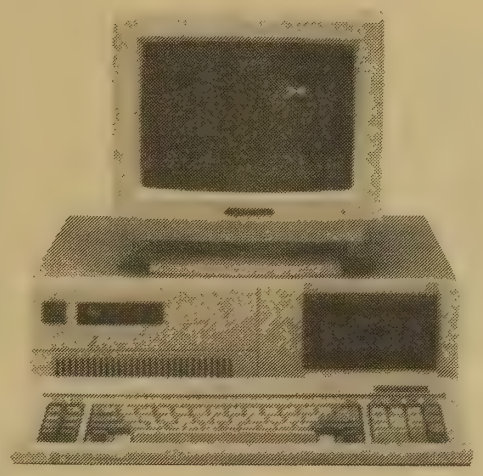

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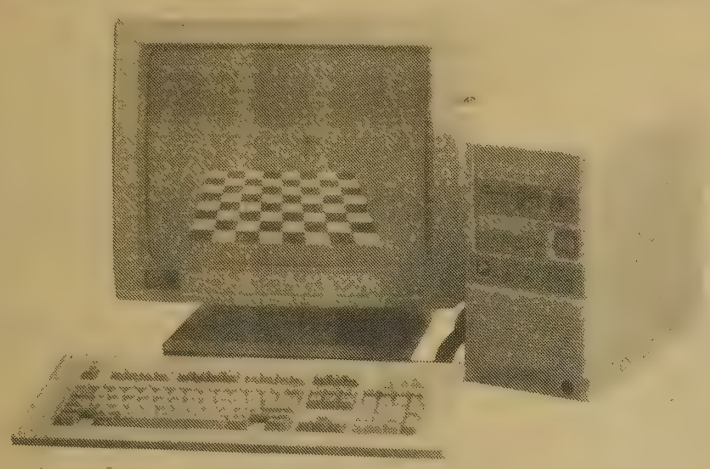

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LANs

BY WAYNE YACCO

Variations On The Server Theme: From Vulcan To Atlas

The Eagle has landed. And it has landed back in the lap of its creator, Wayne Ratliff (the author of the original *dBASE*). That's the *Eagle* language, described officially as "similar to Ashton-Tate's *dBASE*," i.e., a clone, which is the programming front end for *Emerald Bay*. You remember *Emerald Bay*, don't you? The database engine developed by Ratliff Software, marketed by Migent, disputed by Ashton-Tate, and nearly acquired by Canadian LANware.

Migent had promised a LAN server for *Emerald Bay*, but one was never delivered before the bottom fell out. Nearly a year later, after Migent closed its Incline Village doors, after litigation for *Emerald Bay*'s return, long after the apparent resolution of the Ashton-Tate suit, Ratliff Software promises that the LAN server is ready. More than that, the *Emerald Bay* product has been refined and improved, including an *Eagle* compiler, and it awaits "only the printing of documentation before it ships" according to Wayne Ratliff.

In an interview for this column, Ratliff described the LAN server as being a third client-server type: neither a file server nor a database server. He called this variety a "table-server" model (although company literature describes it as a database server).

From its description, the table server seems like a worthwhile refinement to the client-server model. The table-server model features a server that is (relational-database) table "aware." It breaks from the file-server model, as does the database server, in that it performs index searches and most index maintenance at the server.

Network traffic in the table and database-server models is reduced below that of the file-server model because indices are not transmitted with data. In a moderate, 10,000 record database, perhaps four levels of indices would need to be traversed to locate a record. A file server would have to send all of these levels to allow updating of the database. Only 20% of a typical data packet might be data. In the table model, the updating is performed locally at the server.

However, the table model differs from the database model because it does not perform all database functions. Some functions, those that optimally can be off-loaded from the database engine, are shared with, or performed entirely at, workstations. These features include data-validation, query-optimization and editing tasks. This improves performance of the database engine and reduces the workload of the server on which it runs.

Both *Eagle* and the *C Developer's Tool Kit* will include a two-user version of the LAN server. Developers will be able to create LAN applications without actually investing in a LAN- server license. Developers may also be interested to note that *Emerald Bay* uses the B+Tree file structure and was written with a heavily modified version of the C-Index database library as its core.

In addition to *Eagle* and its developer's kit, the *Emerald Bay* engine will support the *Liaison* spreadsheet interface (formerly *Summit*) and, eventually, other applications.

One last note about *Emerald Bay*. The Eagle not only landed in Los Osos (the bears), but it is undergoing a name change. It now will be released as *Vulcan*. Not coincidentally, that's the original name of the microcomputer database that marketing savant Hal Pawluk renamed as *dBASE* all those years ago.

The "Surface" Metaphor

Emerald Bay uses the term "surfaces" to describe applications that interface with it. Those applications, such as its database language, are said to fit on top of the database engine like an outer coating.

One other database uses these same metaphors: Microrim's *Atlas*. The SQL database engine will initially have an *R:BASE* program-development surface, for example. *Atlas*, which is scheduled for release in the first quarter of next year, also shares *Emerald Bay*'s philosophy of dividing network database tasks between servers and workstations.

Atlas has also had claims made for it that are giving some of the competition fits. One competitor's spokesman vehemently asserted that the vendors of established database servers—Oracle, Gupta, Sybase, and others—just don't believe that *Atlas* will ever ship. He just can't believe that Microrim could quickly turn out an application that none of the others have developed over the many years they've been in business.

What *Atlas* promises is the ability to directly use data from many major databases. Not to import or export data or to obtain it through a custom driver that tricks *Atlas* into thinking it's accessing one of its own databases, but to process data from diverse hardware, operating systems, and database applications.

According to Thom Kozik, *Atlas* product evangelist, Microrim will publish a white paper in the near future outlining the product's capabilities. Those capabilities include the ability to run on many major hardware platforms, under several operating systems, and to directly access the data of other databases while preserving their integrity and complying with their security requirements.

Kozik says that, for the most part, other databases access the data of foreign databases through import and export facilities or through custom applications. *Atlas* will transparently access data while it resides in major databases. It will feature on each platform a graphical user interface familiar to that system's users. And it will provide transparent transport of applications across these platforms by including information such as screen layouts in its own database. Including application information in the database will reportedly allow each edition of *Atlas* to dynamically create a version of an application for its own platform.

Ratliff described the Emerald Bay LAN server as being a third client-server type: neither a file server nor a database server. He called this variety a "table-server" model.

All of these capabilities are part of Microrim's strategy for providing enterprise-wide data sharing—the ability to access data distributed throughout a large organization's computers and networks. Other database companies have their own strategies but most of the serious contenders are working on ways to provide this capability.

The ability to access and process data across platforms will provide a new level of distributed processing. An application will be able to work with data from all of the applications that have evolved with the growth of an organization's computer systems. Next month we'll look at some of the efforts being made by developers such as Gupta Technologies, Oracle, and Microsoft/Sybase/Ashton-Tate.

Addendum

Last month we concluded our overview of LAN technology with a discussion of network protocols and *Netware 386*. We also mentioned the client-server model. There are other alternatives to the client-server model that were mentioned only indirectly.

The client-server is one of two models in common use for network communications. The other is the peer-to-peer model used by networks such as TOPS or 10 Net. IBM's APPC protocol is a peer-to-peer protocol that will be used to connect workstations and networks to mainframes.

Peer-to-peer networks provide the ability for workstations to access the resources on other workstations rather than requiring that particular systems be designated for handling resource requests. However, security administration, email, and other services can benefit from the centralized nature of the client-server model. ■

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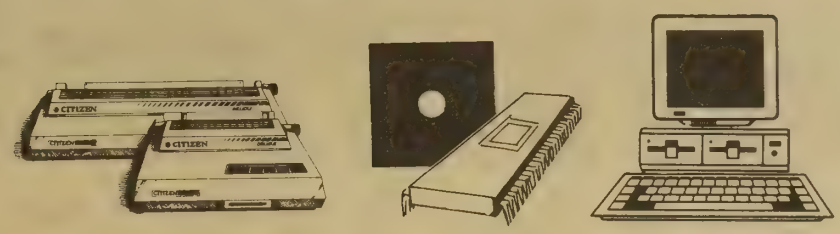

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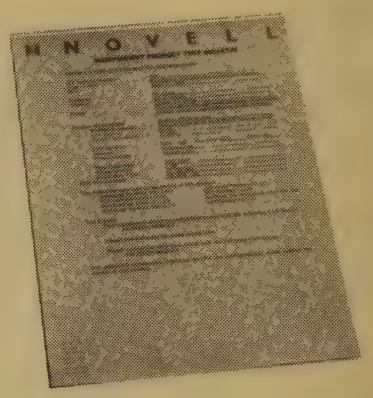

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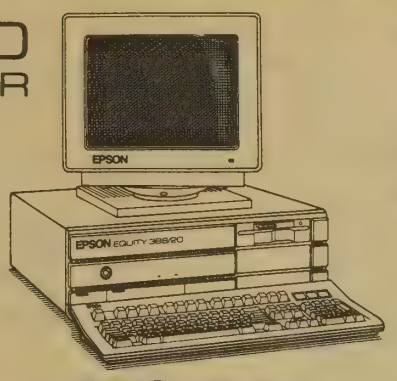

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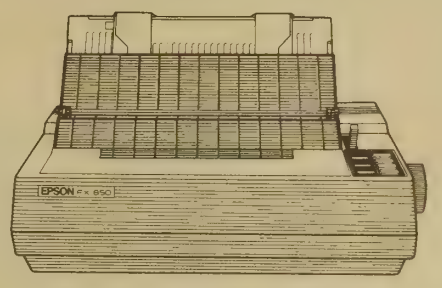

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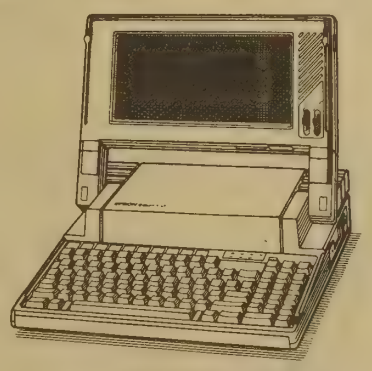

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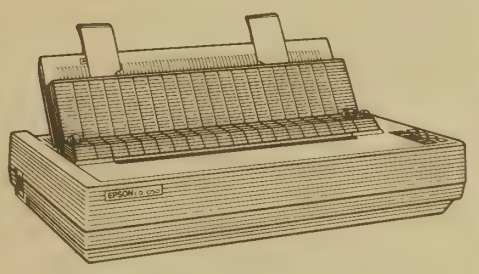

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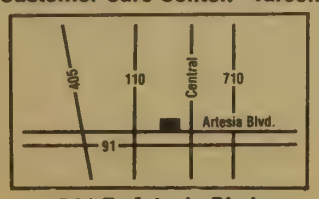

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BY SUZANNA MUSICK

Managing Information As A Resource

Information is a resource which, like personnel, materials, equipment, and money, can help you run your business more smoothly if you manage it correctly. Computers have made information more accessible; they have given even the smallest companies the power to ask questions about the current health and recent performance of their businesses in an easy, timely, and affordable manner.

In today's business environment, it is the exception rather than the rule when you come across a company that is not using computers. The installation of accounting or other informational computer systems has greatly increased the efficiency and productivity of many companies, and your business can benefit by formalizing the handling of the information that flows through your company.

Installing a computer system, no matter what size, requires that you assume the same responsibility for it as you would your other resources. This article focuses on three primary areas of computer management: management of the data and information that flows through the computer system and the business organization; management of the physical computer system hardware, software, and the data stored in and around that system; and management of the personnel responsible for implementing, operating, and maintaining the information system.

Let's look at each of these in more detail.

Managing Data And Information

Data can be defined as the raw resource that your computer system transforms into useful information. Individual business transactions (e.g., sales and expenses) are typical of data converted to financial statements or sales analysis reports for use by the managers/owners of a business.

If your information system is to function properly, you must have procedures in place that ensure accurate and complete gathering of data for entry into the information system. Such procedures include collecting and organizing all sales orders for input into your accounts receivable system, or manual coding of accounts payable invoices to reflect the expense accounts to which these items are to be distributed.

Security is also an issue, and information resource management overlaps with general internal accounting controls (controls outside of the computer system). One example would be procedures for evidence of authorization of purchases over $5,000. You must manage both the information that goes into the information system and the information that comes out. For this reason, management must continually evaluate the information it receives. As your business grows and changes, you may require different types of information or alternative views of the information you already receive. For example, you may have been receiving a report that shows sales by product line, but in the last year you have begun using outside salespeople and now need a report showing sales first by salesperson, then by product line. Even if the information entered into the system is accurate and complete, the output (the information reports) must be of a form and content that's useful to management.

Copyright © 1989 by Suzanna Musick. All rights reserved. *Suzanna Musick is a Manager in the Computer Consulting Department of Hemming Morse Inc., CPAs. Her experience encompasses a wide range of industries such as distribution, retail, construction, real estate, financial and professional services.*

Management Of The Computer System

The overall management information system in your company is supported by a physical computer system. This consists of the computer, printers, disks and/or tapes, cables, and various other hardware pieces upon which you store your data. Management of the physical computer system encompasses three areas: system security, a data backup plan, and disaster recovery planning.

The data entering your computer system must be secure from access by unauthorized personnel. Since only trained personnel should be operating your system, they are the only ones who should be allowed access to the computer. Certain information (e.g., payroll) is not to be viewed by everyone, and access to this information should be restricted. These security issues can be addressed in several ways, from the use of passwords within the system software to denying physical access to the system by keeping the computer in a locked office.

Perhaps the most vital area of concern is data backup. The information in your computer system must be backed up—copies of the data should be made and stored away from the computer. If something should happen to the data in the computer, you can use the backup copy to continue operations. As I discussed in an earlier article on taking care of your computer, you should establish procedures for daily, weekly, and monthly backup of data, including checklists to document that these procedures are being performed. Considerable time, effort, and money can be lost due to the destruction (accidental or intentional) of data when no backup exists. A few minutes of time each day, and the cost of computer disks or tapes, are all it takes to help ensure continuous operations.

The third area of the physical system management is disaster recovery planning. While loss of data can be thought of as a disaster, and does overlap with disaster recovery planning, this area deals with overall loss of the computing facility. If your computer fails and must be sent in for repairs, you must have a plan for obtaining another computer on a temporary basis. This could be a different computer at your location, or one you could rent.

On a larger scale, you must be prepared for disasters such as a fire. Again, you should have a plan in place for such a situation that directs you where to go to obtain needed computer resources. If you have implemented a sound data backup plan that stores copies of data and programs off site (away from your business), it would take little time to begin computer operations following a disaster.

A computer system, just like other types of machines, is subject to failure from any number of causes, some unpredictable. The storage media (disks and tapes) that hold your company's data are also volatile and should be backed up and secure from unauthorized access. All of these issues must be addressed if your computer system is to be managed properly.

Management Of Personnel

The third ingredient of your company's management information system is personnel. There must be a designated group of employees whose duties encompass the tasks necessary to support the successful operation of your management information system. In a smaller organization this may consist of only a few people, in a larger company it may be hundreds.

Each task, from gathering data (source documents such as sales invoices) to data input, report generation, and distribution of the reports to management, must be assigned to appropriate personnel. "Appropriate personnel" is important here, as you want to ensure that the people operating your system are properly trained in both the computer operations and their job functions (e.g., accounts payable processing).

All new employees whose job requires them to use the system must receive formal training in its proper use from someone who fully understands all the implications of operating the system. Written daily operating procedures manuals documenting the flow of information through the system will be very helpful in training new personnel and reviewing the current performance of those using the system.

Someone in management must be responsible for overseeing all of these tasks. Periodic review of the organization's effectiveness must also be performed and necessary changes made.

Conclusion

As I have discussed in this article, information is a resource that must be managed. It is as important as all other resources in your organization. Proper attention to the data, computer system, and personnel will help ensure an accurate and supportive management information system. ■

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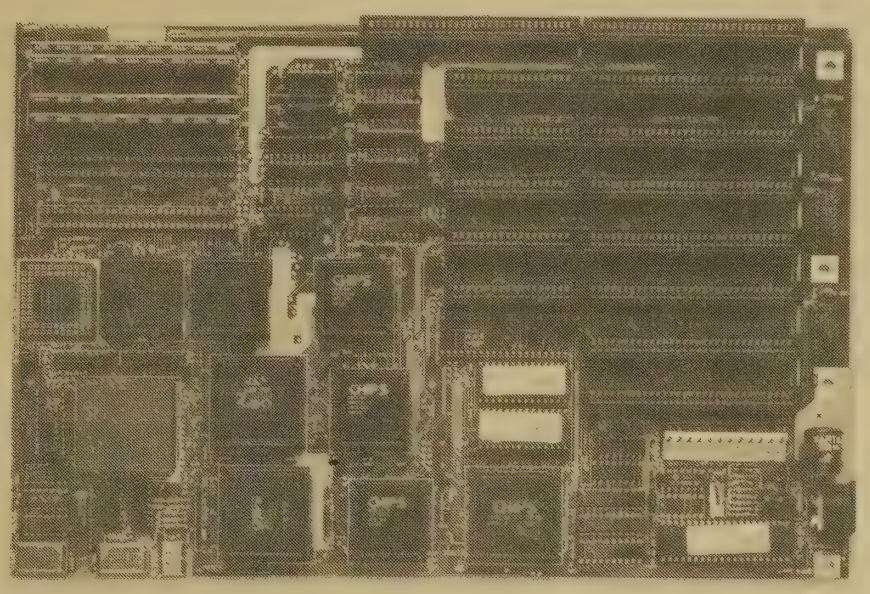

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BY MATTHEW LEEDS

The Best Freely-Distributable Software

I've been getting commercial software sent to me for review for the last five or six years. Both the best and the worst have shown up on my porch, some of it finally ending up installed on my hard disk for regular use, and much of it ending up on the shelf gathering dust. Of the dozen or so programs I use on a regular basis, almost half are freely distributable.

A distinction needs to be drawn here, which is why I call this software freely distributable instead of public domain. Much of the software written by authors for distribution by other than traditional commercial means is not public domain. The copyright is retained by the author, who often puts certain restrictions on its use or distribution, and often asks for a contribution if you use it on a regular basis.

I've completed a list of ten programs I think exemplify the best in freely distributable software. These are programs that I either use on a regular basis or believe offer exceptional features. They are all available from the standard distribution channels used for these types of programs: Fish disks, BBSes, and user groups. If you have serious problems finding any of these, let me know and I will post them on The WELL. You can send me email on The WELL (mklsf), or send a letter care of *MicroTimes*.

VirusX is the best virus protection I've found. There are other virus protection programs, and other schemes for testing for viruses, but so far, if you only use one program, VirusX is the one.

ARC

By System Enhancement Associates

ARC is used to compact a set of files (or a single file) prior to uploading or transferring via modem. It makes the process of sending a set of files simple by allowing you to preprocess the files into a single archive that's much smaller than the original set of files; since it is a single file, it does not require a batch send mode.

ARC has become something of a standard on the Amiga, as well as in other environments, but it has some drawbacks. It only supports filenames of eight characters (a characteristic of its MS-DOS heritage), and it has no support for preserving subdirectory structures. It is still very much in use, in part because it is so easy to use.

ZOO

Written by Rahul Dhesi and modified to run on the Amiga by J. Brian Waters.

Zoo supports full-length AmigaDOS filenames and can archive and restore a directory structure. This release of *Zoo* has a command that tries to make life a little bit easier when using *Zoo* with a single drive—a command line option to *Zoo* that causes it to wait for the user to press return before doing any disk I/O. If a "w" is the first character in the command, *Zoo* will wait for return (zoo wx zfile). These options make *Zoo* easier for users when they unpack files, and much easier for users with a single drive (if there are any left out there). *Zoo* is a little more intimidating than *ARC*, but it has gained quite a bit of popularity.

Copyright ©1989. All rights reserved.
Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.

AutoMount V1.4

By Khalid Aldoseri

AutoMount will automatically "mount" all the entries in your "DEVS:Mountlist" file. It will attempt to mount each device it sees in the mountlist file, except for the RES?: partitions. Also, if a device has already been mounted, *AutoMount* will not complain.

The main reason for this program is to shorten your startup-sequence file. Instead of having a set of lines in your startup-sequence like this:

Mount DH1:
Mount PIPE:
Mount SPEAK:

you just use the command "AutoMount". This mounts everything. If you say "AutoMount Floppy", this will speed up the program when booting from a floppy disk. *AutoMount* will do the following:

- Initialize RAM Disk
- Copy "Devs:Mountlist" to RAM
- Copy "C:Mount" to RAM
- Mount DEVICE FROM RAM:Mountlist

This will normally increase mount speed by 50%.

DiskSalv

By Dave Haynie

DiskSalv V1.40 is a disk recovery program for all Amiga file system devices that use either the AmigaDOS V1.2/V1.3 Standard File System or the AmigaDOS V1.3 Fast File System. *DiskSalv* will scan a bad disk volume for anything that can be recovered, and will restore these items to any AmigaDOS volume. It does not make any attempt to fix the bad device in place; thus, any file that can't be restored with *DiskSalv* might possibly be restored with an alternate method.

DiskSalv is the program that should be on all Workbench disks instead of *DiskDoctor*. It works, and when it doesn't, it leaves your original disk intact (or at least in no worse condition than before) so that you can try some other method of fixing it. It works best for floppies, as it generally requires a second hard disk to write to when repairing a hard disk, although there are ways around that restriction.

FastDisk

By Torsten Stolpmann

FastDisk is a program that optimizes the at-times-chaotic disk structure of an Amiga disk. Everybody knows how long it can take for a long directory to be read into memory. *FastDisk* accelerates this process between three and five times. Everybody knows the noise the drive makes when trying to read the Workbench icons. *FastDisk* reduces the head movement to a minimum, accelerates the validation time and the boot process, and also accelerates the load-time of a program up to 50%.

It does this by reorganizing the layout of a disk. File headers, icons, and other directory items are placed in order in the directory, while files are written on contiguous tracks to minimize head seeks. *FastDisk* is as easy to use as Diskcopy. If you continually write back to a disk optimized with *FastDisk*, you will eventually need to reorganize it, but for boot disks or disks with large programs it's excellent.

FPIC

By Bob Bush

Fpic is an image processing program, designed specifically to be used in conjunction with digitized (*Digi-View*) lo-res black & white IFF picture files.

Since the program was written to utilize *Digi-View* B&W pictures, some special processing relating to these images was required. When a b&w lo-res image is saved by *Digi- View*, it stores the image as a 32 color IFF format file. Since the Amiga is capable of displaying 16 shades of gray, the *Digi-View* image only utilizes colors 16 thru 31 of the

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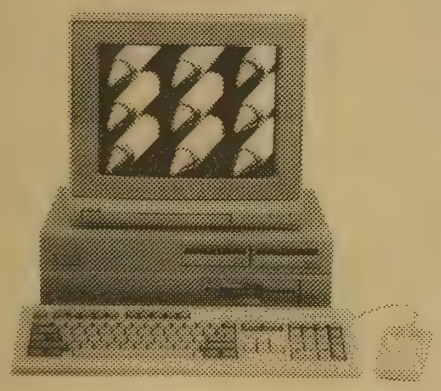

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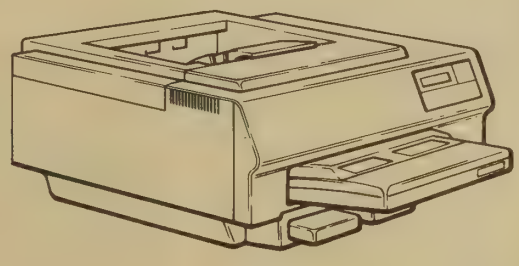

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Of the dozen or so programs I use on a regular basis, almost half are freely distributable.

entire 32 color palette. *Fpic* depends on this color mapping to work effectively. Results using images without this color mapping are unpredictable (at best) but sometimes interesting. If you're interested in experimenting with image processing, *Fpic* is an excellent place to start. You can get around the color mapping problem if you are using non-*DV* images by remapping an image to sixteen colors in a paint program.

LEX

By Jeff Sullivan

LEX is a program that performs a number of useful functions on a text file. It outputs word count, long word count, and sentence count; it performs three readability algorithms on the document. I've found it very useful as a means of judging my writing. The three algorithms are

The Gunning-Fog index—The number equals the approximate level of schooling (in years) needed to understand the document.

The Kincaid index—Similar to the Gunning-Fog index in its interpretation.

The Flesch index and Flesch Grade Level indicators—The Flesch index is inversely proportional to the difficulty of the document; the lower the scale, the harder the document. It is based on a 1-100 scale. The Flesch grade level indicator is, again, analogous to the other two.

The usefulness of three different indices is to compare their agreement. The closer their agreement, the more reliable the measure (they all use different algorithms, but usually come out pretty close).

NewZap

By John Hodgson

NewZAP is a multi-purpose file sector editing utility. If you've ever had the need to alter just a few bytes within a file, examine its binary and ASCII representations, or search for key sequences of digits or characters, *NewZAP* will make your hacking life a little bit easier. It does what text editors were not meant to do; precise position-oriented object modifications. NewZAP will run from CLI or Workbench under any KickStart with or without FAST RAM. I've used it to edit files on-disk to change defaults, patch file requesters, or repair damaged icons. It's a dangerous program if you're not careful, but it's also very useful.

POPCLI

By The Software Distillery

POPCLI is designed to solve two problems at once. First, it provides a simple way of starting another CLI at any time without having to load Workbench or exit whatever program you may be using. Second, it has a built-in screen saver mode that automatically turns off the Amiga display when there has been no input for a given period of time.

Once *POPCLI* is running, you can use it to get a new CLI from whatever program you are running by pressing Left Amiga and ESC at the same time. This brings the Workbench screen to the front and then starts up a new CLI window on the Workbench screen. This is extremely handy when you start a program from CLI and then find you need to do a CLI command.

The other function *POPCLI* performs is to blank the screen for you. This saves on the wear of the monitor phosphor. It will do this for you automatically any time you have not pressed any key or moved the mouse for a given period of time, regardless of what has been written to the screen. This is useful when you leave the Amiga on unattended so that you don't have to mess with the brightness control or, worse yet, turn the monitor off, putting wear and tear on its power supply. Furthermore, it only takes a touch of the mouse or any key on the keyboard to bring it all back.

I've mentioned *POPCLI* before; it's one program I couldn't do without.

VirusX

By Steve Tibbett

VirusX is a must-have. I've covered Amiga viruses in the past, and *VirusX* is the best virus protection I've found. There are other virus protection programs, and other schemes for testing for viruses, but so far, if you only use one program, *VirusX* is the one. ■

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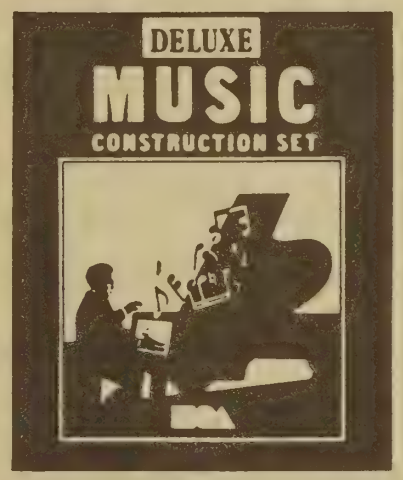

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BY BENNETT FALK

In The Land Of Dot

Exploring The UNIX File System

By Bennett Falk

The Queen of Dot looked down from her throne on a young man in a polo shirt who shifted uneasily from foot to foot.

"Your Highness, I'm here to ask for some money."

"Who isn't?" the Queen of Dot replied. "What exactly do you intend to do with this money you're asking for?"

"I propose to circumnavigate the Land of Dot and the file system of which it is a part. I hope to produce a complete map of the universe in which we live."

CP/M seemed to have no concept of directory at all; there were simply files strewn across a disk, and if the name of a disk was unknown, its contents could not be examined. The DOS and VMS listings had evidence of directory hierarchies, but in both cases the directory hierarchy had to fit on a single disk.

The sound of jocular murmuring filled the room. The Queen of Dot fixed the would-be explorer with a steely eye. "The Land of Dot and its file system are one, you impertinent young man, and they are both flat. Do you hear me? Flat! The expedition you propose would surely fall off the edge of the disk drive on which this kingdom is situated."

"But, Your Highness, surely the land of Dot is not as flat as you maintain. We know there are directories below our own."

"Certainly there are directories below the Land of Dot, but the fools who descend into them never return. I tell you the subdirectories are a pit."

"Perhaps those who move to subdirectories simply lack the means to return to the Land of Dot. Who among Your Highness' advisors knows how to move up a directory?"

One or two of the Queen's attendants broke into giddy laughter, but the Queen ignored this breach of decorum. "Explain yourself," she demanded.

The explorer continued: "Your Highness, I have experimental evidence that there is a directory above the Land of Dot, and I believe we have the means to go there and return.

"First, we know that the command 'ls' produces a kind of map of the Land of Dot. That command produces a list of the files and subdirectories in our land.

"My friends and I have recently discovered the '-a' option for 'ls'. This command, 'ls -a' reveals parts of Dot we had never seen before. In particular, it shows us directories named '.' and '..', and when we used 'ls' to examine those ('ls .' and 'ls ..'), we discovered even more remarkable things.

"The directory '.' is the Land of Dot, and 'ls .' shows us a map of Dot! Furthermore, the directory '..' seems to be a directory above the Land of Dot. When I issued the command 'ls ..' a map was produced that, in addition to many strange names, contained the name "Dot", our own land.

"I submit, Your Highness, that the Land of Dot is a directory in a hierarchical file system and that we can move about freely in this file system. One of my more adventurous colleagues has already traveled to the directory above the Land of Dot using the command "cd ..." He remained in that strange land long enough to perform a few experiments before intense dizziness forced him to return with the command "cd Dot".

"His experiments suggest many things. In the directory above ours, there are also entries for '.' and '..'. Using the 'ls' command again we were forced to revise our theory of the meaning of these two entries. We now believe '.' simply refers to the current directory, whatever it happens to be, and not, as we first thought, to the Land of Dot itself. Further, we believe that '..' refers to the parent of the current directory. Finally, we are convinced that there is a directory above the directory above the Land of Dot."

"My research convinces me that the file system in which we live is shaped like an inverted tree. Somewhere above us is a root directory whose subdirectories spread out like branches until they end in leaf directories somewhere below us."

Stunned silence followed this declaration.

The Queen finally broke the spell. "We have heard these outlandish stories before. The archives are filled with fanciful tales about hierarchical file systems." She clapped twice and blue-robed priests came forward with trays on which yellowed stacks of ancient fanfold paper sat under glass lids.

The young explorer examined the printouts and recognized them as directory listings from many different operating systems, CP/M, DOS, the Mac OS, and DEC's VMS. How they had come to the Land of Dot he had no idea, but their evidence was certainly daunting.

CP/M seemed to have no concept of directory at all; there were simply files strewn across a disk, and if the name of a disk was unknown, its contents could not be examined. The DOS and VMS listings had evidence of directory hierarchies, but in both cases the directory hierarchy had to fit on a single disk. One's home disk could be explored, but again, there was no access to foreign file systems without some knowledge of the name of the disk on which it resided.

The Queen chided the explorer, "We know that Dot Land is a directory and that it is situated on a disk drive of some sort. Legends tell us of other disk drives, other devices. But those disks are separated

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from our world by an abyss whose depth no one has plumbed. Do you seriously believe that you can cross such a bottomless divide?"

"Yes," the young man answered in a clear, strong voice. "By ascending from directory to directory. I am convinced that there is a continuous path of directories that can be traversed from this disk to others.

"We have ample evidence," he continued, "of device-bound file systems. My research convinces me that the file system in which we live is shaped like an inverted tree. Somewhere above us is a root directory whose subdirectories spread out like branches until they end in leaf directories somewhere below us."

The Queen looked confused. "Why do you call this thing a 'root' directory? The name is quite distasteful, and in my experience a tree's roots are almost as numerous as its leaves. Why not 'trunk' or 'seed'? And why on earth should this 'root' directory be above us and the 'leaf' directories below? You aren't of Antipodean descent, are you?"

"What?"

"Oh, never mind. Proceed."

"The point I want to make about tree-shaped file systems is that they are easily connected. If the root directory of a file system on one disk were to be mounted on a leaf directory of another file system on another disk, a larger file system spanning the two disks with one continuous directory structure would be the result. It is my belief that the designers of our file system intended just this: that there be one file system spanning all the available disks and that navigation in the file system require no knowledge of the underlying devices."

The Queen of Dot closed her eyes in thought. "This is an interesting theory, but how can it possibly be verified? If the file system of our own disk is a hierarchy, and if the disks themselves are transparent to this business of inter-directory travel, how can you ever prove that your theory is true?"

The explorer smiled. "That is a point of great subtlety. If Your Highness will permit me a few moments more I will be pleased to explain." The Queen of Dot nodded her assent.

"We know in general that a disk drive must contain certain things to be useful. We see mainly files and directories, but there are also some invisible things useful for administering the disk as a whole and the files and directories. My colleagues and I have recently identified one of these structures invisible to us: it is called the 'inode'."

The Queen of Dot glared. "No doubt named by the same person who thought up the 'root' directory?"

"I wouldn't presume to say. 'Inode' is just a name that has come down to us in the literature, and it stands for a small structure that describes a file or a directory. There is one inode for every file or directory in a file system. The inodes are all numbered, so in each file system every object has a unique inode number. Individual file systems are relative to devices, so in the larger system we believe is out there, it should be possible to specify any object anywhere by naming the device on which the object resides and giving the object's inode number on that device.

"It also turns out that some inode numbers are reserved for special purposes. We have read that the root directory of any file system is always inode number 2 in that file system.

"Even though we can't see the inodes themselves, we can get the inode number of any object using the '-i' option to the 'ls' command. We plan to map the inode numbers of each directory's contents on the expedition.

"Most of the time, the inode number for '.' inside a directory and the inode number for that directory's entry in its parent directory will be the same: the two entries are just different names for the same directory.

"However, if the file systems are mounted as I expect them to be, we will eventually run into a directory where the inode number for '.' is 2. We can be pretty sure that this is the root directory of a file system and that its parent directory is on a different device. When we move to the parent directory, its entry for the subdirectory we just came from should have a different inode number."

He paused triumphantly. The Queen was staring at the ceiling contemplatively. After a few seconds she lowered her eyes to look the explorer in the eye.

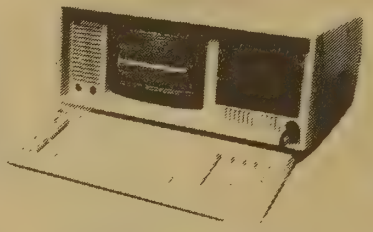
"The implication of your theories is that somewhere on the system, there is a root directory for the larger, unified file system that you assume to be there. And this directory will have no parent directory. It is the absolute top of the file system."

The explorer's eyes lit up. "Yes, that is correct, and when we have found that directory, we will be able to map the whole file system's contents with 'absolute pathnames'!

The Queen of Dot's fingers drummed idly on the arm of the throne. "And if I underwrite your exploration, will you in turn claim this root directory and all its contents for me and for the Land of Dot?"

The explorer shifted uneasily, but nodded.

"Excellent. Of course, we'll have to change the name. I really couldn't bear to be called the Queen of Root." ■



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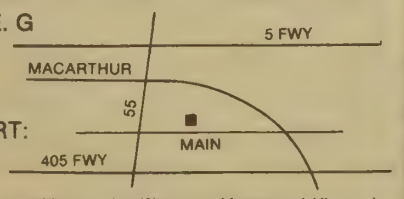

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USER GROUP NETWORK

BY MARY EISENHART

Certainly is a lot of mail around the office this month—maybe everybody's spending their vacation sending in user group news? In any case, we've received lots of news from new and old organizations and boards, so here goes.

Computer consultants of various types will be glad to know about the **Independent Computer Consultants Association (ICCA)**, which is a national professional organization dedicated to ethical standards in computer consulting. Among its services is a referral service, which will also probably be of some interest to people looking for a reliable consultant to deal with that office reorg and other interesting computer-related projects.

The ICCA has various local branches, each of which meets monthly, according to **Dennis Evans** of Orange County who wrote to tell us all this. For more info, call the branch nearest you: Los Angeles (805)253-1973; Orange County (714)852-6164; San Diego (619)294-6550.

We haven't heard much from the Texas Instruments groups lately, but we're glad to report that the TI scene seems to be alive and well. **Lew Howard** of **TIPC-West** wrote in to tell us that contrary to popular belief, he has not been converted to Timex—due to one of those database foul-ups, we'd been listing the group's contact info under Timex-Sinclair. Sorry for the inconvenience, folks, and check out TIPC-West, which meets on third Mondays at 7 pm at 11828 Jefferson Boulevard in Culver City. And call Lew at (213)397-9668 if you've got questions to ask or news to impart.

Also, **Kerry Grissom**, who hails from my home town of Whittier (and enough of the Nixon jokes, already...), informs us that now there's a TI group meeting in Brea. Well, actually it meets in La Habra, but its name is the **Brea 99'ers User Group**, **BUG** to its friends. BUG serves the greater North Orange County area and meets on first Mondays at 7:30 pm, Mercury Savings, 1001 E. Imperial Highway, La Habra. For more information call (714)871-3405.

For a computer that's been orphaned for a lot longer than it ever was on the dealers' shelves, that TI99 is sure an inspiration, saved and improved by the concerted efforts of many users. Keep up the good work, folks, and a tip of the *MicroTimes* virtual hat to you.

If you want to experience Macintosh evangelism at its finest, head on down to the **MacValley** meeting on September 6, where **Guy Kawasaki** will be demonstrating the new version of *4th Dimension*. Kawasaki, it is universally acknowledged, gives great demo and even makes disk crashes look like part of the script. This will not be another boring product presentation, so check it out.

The meeting will be held at the Robert M. Wilkinson Multi-Purpose Senior Center, 8956 Vanalden in Northridge. (Here's a nice touch—**David Lagerson**, who appears to be the current Minister of Information at MacValley, includes the helpful tip that the meeting place can be found using the Thomas Bros. Map No. 7, A-B, 5-6.) Things get started at 7:30 pm. Call David at (818)882-4467 for more info.

From **Tom Tcimpidis**, Famous Sysop, comes an update on the status of his **MOG-UR's EMS** board, (818)366-1238, which has been online since January 1981. It's a multi-user, multi-line BBS that runs 24 hours a day, with 24 active SIGs in its message base and a large file library with 26 file areas. Also, in addition to fairly standard 1200/2400 baud support, the board supports HST 14400 and 9600 baud modems, so you can transfer those files *fast*.

Speaking of fast modems, **Robert Holland** sent us email via MacNET about the special deal his company, Style Pro, is offering on Racal-Vadic V.32 9632VP modems, which support baud rates of up to 19,200 bps. Sysops can buy the modems from Style Pro for $795 (add sales tax in California). So if you'd like to speed your system up, or just have questions, give Robert a call at (408)942-5528, or dial up the **Style Pro BBS** (408)942-5529 (1200/2400, 8-N-1), or leave him a message on MacNET (RHolland).

This just in via voice phone: FidoNet board operators and other interested parties are invited to **FidoCon**, the annual gathering of the Fidos, which is taking place this year at the Holiday Inn Park Center Plaza in San Jose, August 24-27. Speakers will include Fido author **Tom Jennings**, **Phil Becker**, author of TBBS, and **Chuck Forsberg**, author of ZMODEM. There's also a banquet on the 26th, with the featured speaker being none other than **John Dvorak**. Tickets are $75, with special one-day passes for the 27th available at $35, and banquet tickets for $30. To register by mail, send payment to FidoCon, PO Box 390770, Mountain View, CA 94039; recorded information is available at (415)573-8983. On-site registration will also be available starting at 3:30 pm on the 24th in the hotel lobby. Thanks to **Les Kooyman** who called to let us know about this.

And finally, here's something we like to see—a user writing in to praise somebody else's board. Says **Eric Berry** of Irvine (who sent his message via fax): "I came across a fairly new BBS that is pretty good for the game players (downloadable type). They have several game directories that are very well categorized, and all play tested by the sysop, **Gene Hankins**. You might want to add this to your list." Consider it added. Folks of the gaming persuasion, call up **The Meadows in Tustin**: (714)838-1569, 8-N-1, 1200-14,400 baud.

That's all for now. Keep it coming. Send US Mail to MicroTimes User Group Network, 5951 Canning Street, Oakland, CA 94609. Send email to **microx** on The WELL (415/332-6106), uucp **{pacbell, hplabs, ucbvax, apple}!well!microx**, and **MICROTIMES** on MacNET. Stay tuned for our all-new CompuServe address. And send faxes to (415)652-4618 and (213)467-5486. ■

USER GROUPS

INTERNATIONAL

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FidoNet Argentina (054). (011)541-22-419. 8-N-1 3 PM-11 AM PST. The 1st fido node in Argentina has over 450 subscribers. Specializes in issues from S.A. PD software library to d-load. Sysop: Pablo Kinman.

Janis II. (03)255-8856. 24 hrs, 1200/2400/9600. Japan Newsbytes, USA Today, InfoMat magazine, Online Digital Music Review. Over 500 megs info & D/L Pgms on HDD. Sysop: Pete Perkins. Voice: (03)255-8880.

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203

Terrapin Station. (203)656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

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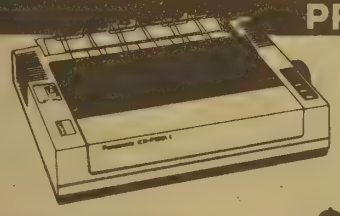

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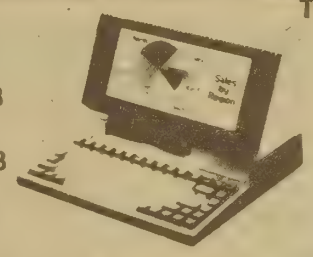

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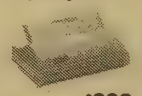

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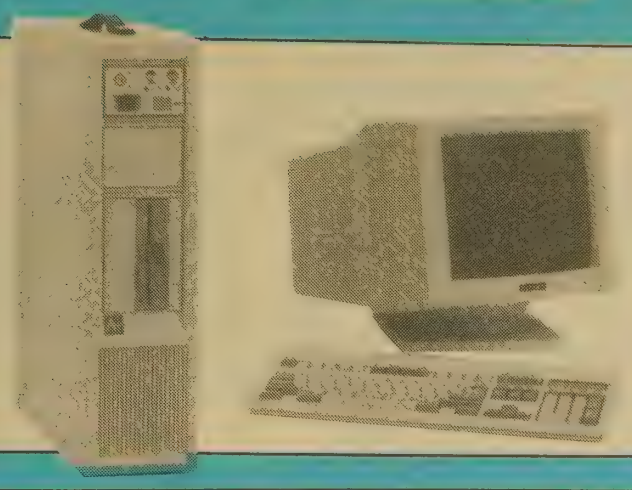

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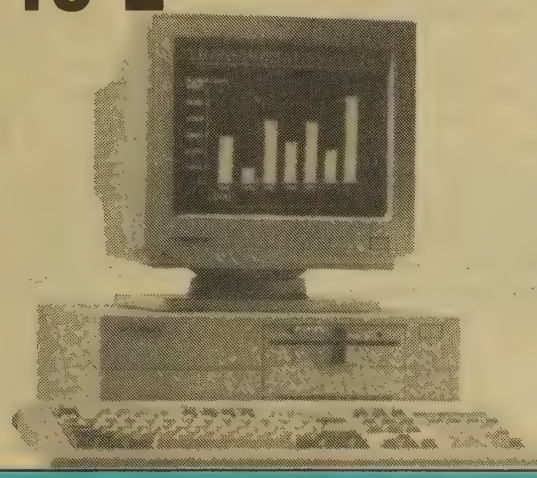

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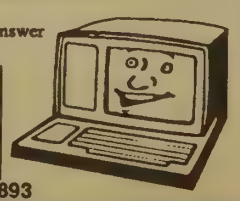

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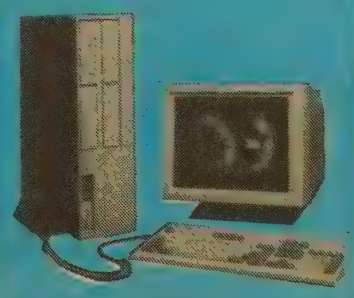

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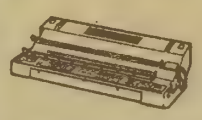

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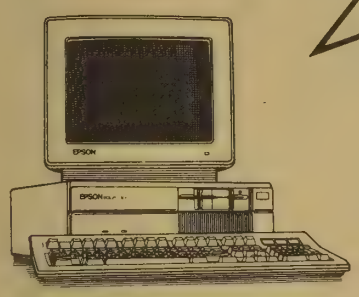

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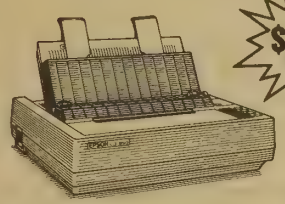

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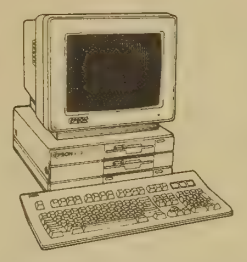

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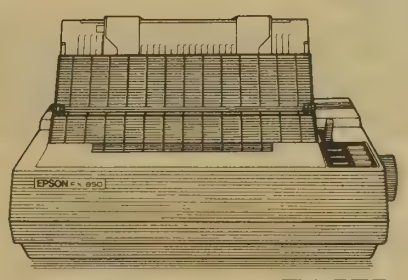

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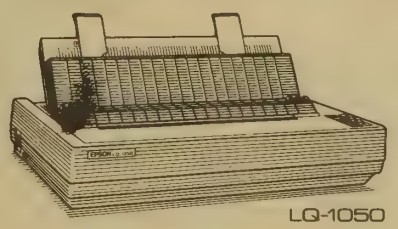

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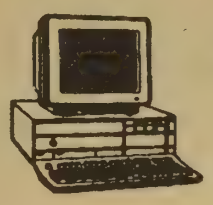

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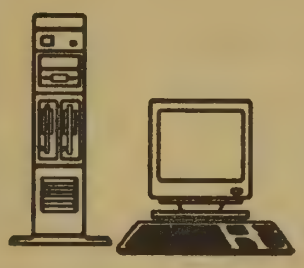

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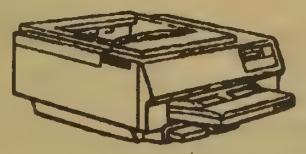

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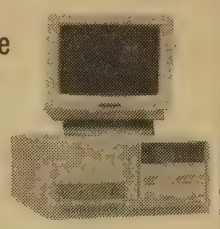

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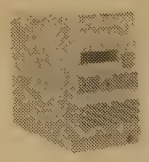

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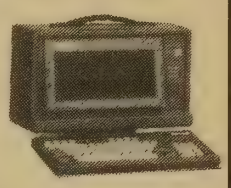

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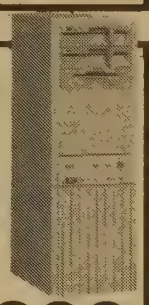

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The Board With No Name. (818)785-3340. 300/1200. A gay-oriented BBS. No hourly fees; no time limit w/ paid access. 16 lines.

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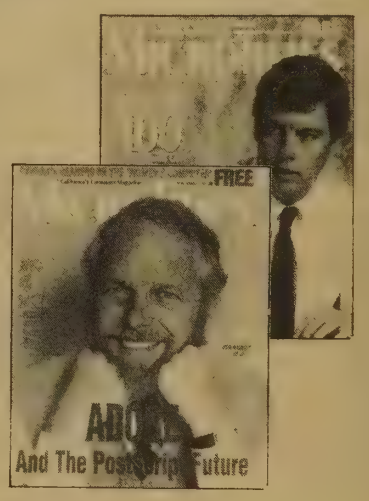

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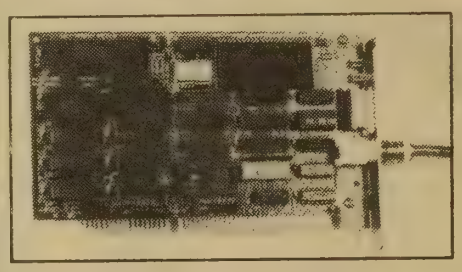

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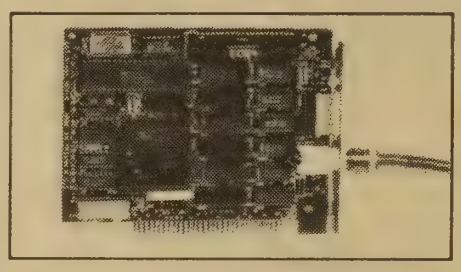

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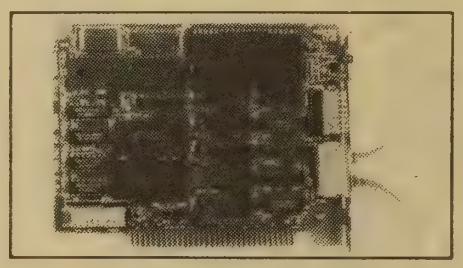

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Associations

ACCPAC Accounting SIG. Meetings: 2nd Wednesdays at 7 pm. Users, CPAs, consultants, and other business people interested in sharing information on Computer Associates' ACCPAC Accounting software. Call Donna Miller, (213)393-0244.

California Educational Computing Consortium (CCCE). For information, write Herb Garrett, Long Beach City College, 4901 E. Carson ST., Long Beach, CA 90808.

Computer Professionals for Social Responsibility. Meetings: Most third Wednesdays, 7:30 pm, UCLA. CPSR/LS focuses on computer system risk and reliability and on privacy and civil liberties issues.

Independent Computer Consultants Association (ICCA). Meetings: Monthly. Call: Los Angeles, (805)253-1973; Orange County, (714)852-6164; San Diego, (619)294-6550.

International Blind Users Group (I-BUG). Part of the National Association of Blind and Visually Impaired Computer Users. Membership consists of access to CompuHelp, a 24 hour on-line database/bulletin board system, and receiving CompuHelp On-Disk, a modem database bulletin board system on two double-sided disks. Call: (916)783-0364 or 645-8036.

LA Real-Time Problem Solvers. Meetings: 4th Saturdays, 10 am to 1 pm, Hawthorne Public Library, 12700 S Greviellea Ave., Hawthorne. We speak A/D, SBC, RISC, FORTH, and C. We support real-time, real-world hardware and software problem solving, such as firmware, device drivers, instrumentation and very smart toasters. Call: (213)371-0589.

National Account-A-Call Users Group (AACNUG). Meetings: First one held in June. Call: Shelly Schoenberger, 1-800- 447-TUMS.

North Orange County Computer Club (NOCCC). Meetings: Monthly on Sundays, Chapman College near downtown Orange. Help for beginners, SIGs, educational activities, monthly newsletter. Open to any computer user. Call: (714)998-8080.

Realtor Microcomputer UG (RUG). Meetings: 4th Thursdays, 7 pm, Pasadena BOR, corner of Orange Grove and Los Robles, Pasadena, CA.

Westside Computer Users and BBSers Group. Meetings: Last Saturdays, 6:30 pm, Flakey Jake's restaurant, 2347 S. Sepulugda Blvd. @ Pico. Call: Dave Harrison, (213) 857-5800.

User Groups

AMIGA

Amiga Friends. Meetings: 3rd Sun. Rancho Santiago College, Rm R-124, 17th & Bristol, Santa Ana. Call for current meeting info: (714)775-7237 (24 hrs.)or write: P.O. Box 4186, Huntington Beach, CA 92605.

Amiga Special Interest Group. Meetings: 1st Sunday except holidays. Chapman College, 333 N. Glassell, Orange, CA. Amiga SIG is part of the North Orange County Computer Club, a thousand member organization together 12 years.

Amiga User's Group Of Long Beach. Meetings: 3rd Sundays, 1 pm, Mid-Cities National Bank, Lakewood and Artesia, Bellflower. Tech, Beginners, Video/Graphics sigs. (213)422-8226/432-2088.

Bits & Pieces Amiga Group of Anaheim. Meetings: each Tues. 6:30-10 PM 1130-A North Kraemer Blvd., Anaheim, CA. DOS Classes, tech. help & more. BBS: (714)630-8897.

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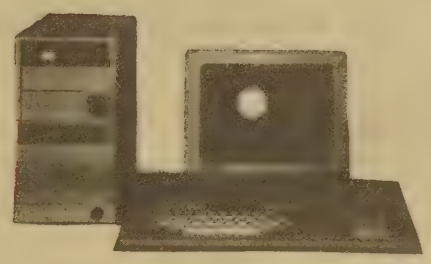

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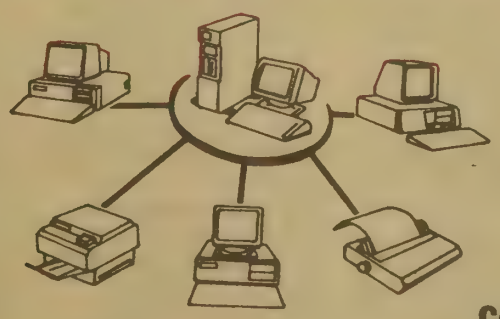

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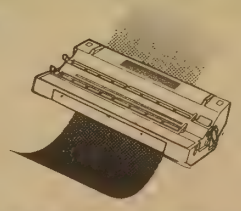

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Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

San Fernando Valley Amiga Users Group (SFVAUG). Meetings: last Tuesdays 7 pm, The Meeting Place, 6507 Fallbrook Ave, Canoga Park. Call: Randy, (818)719-9211.

South Bay Amiga Dudes. Meetings: 3rd Thursdays, 7 pm, Redondo Beach Blvd., Lawndale. Call: Charlie Breene at (213)540-2834.

South Orange Commodore Klub (SOCK). Meetings: 3rd Saturday 9:00 A.M. Union Savings, 23688 El Toro Road, El Toro, CA. For Commodore 64/128 users and Amiga users. One-hour general meeting is followed by separate group meetings for each.

AMSTRAD

Amstrad Users Club Of Orange County. Meetings: 3rd Saturdays, 10 am til 2 pm. Board Room upstairs in the Santa Ana Library, Civic Center & Ross Streets. For more information call: (714)953-6471.

Amstrad Users Group, USA. Meetings: Free mail and phone support for PCW. 12741 Matteson Ave. #3 LA 90066. (213)397-7981.

APPLE

Apple/Valley Computer Club. Meetings: 2nd Wednesdays, 7:30 pm, Valley Presbyterian Hospital, meeting room #3. Discussion on Apple, Mac, Amiga, IBM. BBS: (818)782-6471. Up loading/down loading. Visitors welcome. Eamon games, misc. Voice: (818)988-1752.

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213)396-5515.

Tri-City Apple Users Group. Meetings: 3rd Thurs., 7:00 PM, 50 N. Hill Ave., Pasedena. Call (818)846-6682. Friendly Apple II experts.

ATARI

Atari Computer Association Of Orange County. Meetings: 2nd Sun. Rancho Santiago College, Room W101, Santa Ana. BBS: (714)540-7378.

North Orange County Computer Club Atari ST SIG. Meetings: First Sundays, Chapman College in Orange. (714)552-5185, or Bill, 633-4665, or Mac, 751-3090.

Santa Clara Valley Atari Computer Enthusiasts (SCVACE). Meetings: 1st Thurs. 7PM Mint Canyon Moose Lodge, 18000 W. Sierra Hwy, Canyon County. 8-bit group. Atari ST special group now forming.

South Bay Atari Computer Enthusiasts (SBACE). Meetings: 2nd Tuesdays, 7:30 pm, Lomita VFW Hall, 1865 W. Lomita Blvd., Call: Alan, (213)542-7870.

West LA Atari Users Group. Meetings: 1st & 3rd Wednesdays, 7:30 pm, The Federated Group store, Santa Monica. Call: Bill, (213)559-2349.

CLIPPER

Fresno Clipper User Group. Meeting: 4th Thursdays, 7:00 pm. Call: John Rogers, (209)251-7527.

Los Angeles Clipper User Group. Meeting: 4th Wednesdays, 7:30 pm. Call: Theresa Padilla, (213)452-0370.

Orange County Clipper User Group. Meeting: 4th Thursdays, 7:00 pm. Call: Steve Hilton, (714)847-7123.

San Diego Clipper User Group. Meeting: 4th Tuesdays, 7:30 pm. Call: Mick Keily, (619)569-8234.

Valley Clipper User Group. 7:30 pm. Call: Igor Lelchitsky, (818)716-8790.

COMMODORE

Bits & Pieces Commodore Computer Group of Anaheim. Meetings: each Tues 6:30 PM 1130-A N. Kraemer Blvd. (Kraemer & La Palma), Anaheim. Offers public domain software, demonstrations, interactive training on your computer. $33 annual dues.

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Commodore Helpers Of Long Beach. Meeting: 2nd Saturdays 9 am, Mercury Savings And Loan, 4140 Long Beach Blvd. Long Beach C-64 & C-128. Call: (213)424-0508.

C–128 West Commodore User Group. Meetings: 2nd Tuesdays, 7 pm, McKinley School auditorium, Santa Monica Blvd. (except during summer). Call: 6–9 pm, John Calhoun, (818)331-1589.

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Orange County Commodore Technical Users Group (C-TUG). Meetings: 4th Sun. 11:00 AM, 4th & Tustin, P.O. 1497, Costa Mesa, CA 92628. Newsletter; 2 BBS's; door prizes; demos, raffles, speakers, (714)750-3003.

Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

Pasadena Commodore Computer Club. Meetings: 1st and 3rd Weds. 7:00 PM Circadian Room, Pasadena City College Cafeteria. Colorado Blvd & Hill, Pasadena. Call (818)447-2212 after 2:30 PST or write P.O. Box 163, Arcadia, CA 91006. Supports C64 and 128 machines.

San Fernando Valley Commodore User Group. Meetings: 4th Wednesdays, 7:30 pm, Union Federal Savings, Sherman Way and Sepulveda Blvd., Van Nuys. (818)342-0012.

South Bay Commodore Users' Group. Meetings: 4th Tuesdays, 7:00 pm, Home Federal Savings Conference Room, 1670 Pacific Coast Highway, Redondo Beach.

South California Commodore Users Group. Meetings: 3rd Tuesday each month, 7:00 P.M., MidCities National Bank, Lakewood and Artesia Blvds., Bellflower, CA.

South Orange Commodore Klub (SOCK). Meetings: 1st Wed. 7 PM Laventhol & Horwath, Exec. Conf. Rm.7th Fl., 3699 Wilshire Blvd., LA, CA.

The Orange County Commodore Club. Meeting: 4th Saturdays, 11:00 am, Mercury Savings And Loan, Mercury Room, 7812 Edinger Ave., Huntington Beach, Call: Mike Moore at (714)968-6250, or Howard Phillips at (213)861-4165.

dBASE

UCLA PCUG dBASE SIG. Meetings: 3rd Wednesdays, 7:30 pm. Call: (213)874-7471.

Valley West dBASE Users Group. Meetings: 3rd Mon. 7:00 PM Blue Cross Of California, 21555 Oxnard St., Woodland Hills. Call (818)789-0723 or write P.O. Box 16971, Encino, CA 91416.

DEC

DECUS Rainbow Pacific PC-LUG. Meetings: 2nd Wed. 7:00 PM Digital Equipment Corporation, 6101 W. Centinela, Ave., Culver City. Digital Equipment Computer Users Society. Free to DEC users. Call Karen Danforth (818)787-8736 or write P.O. Box 2278, Van Nuys, CA 91404.

DESKTOP PUBLISHING

VICUG–DTP. (Valley IBM/Compatibles Users Group). Meetings: 2nd Fridays, 7:30–10:00 pm. Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818)997-6000.

DESKTOP PUBLISHING

Southern California Ventura Publisher User Group (SC-VPUG). Meetings: 4th Wednesdays, 7 pm, Social Studies School Service, 10200 Jefferson Blvd., Culver City. Questions & Answers, product demonstrations, Library of resources. Very active group! (818)955-5830.

EPSON

San Fernando Valley and Los Angeles Epson QX User Group. Meetings: 3rd Tues. 7 PM 6025 El Escorpion Rd., Woodland Hills. Call: (818)349-7417.

IBM AND COMPATIBLES

Caisonic PC Club. Meetings: 1st Tues. 5:15 PM 9 Holland, Irvine, CA.

Greater South Bay PC User's Group. Third Thursdays, @ 7 PM, Building behind Christ the King Lutheran Church, 2706 W. 182nd St. Torrance. Newsleter, BBS, more! Guests welcome. Call for more information. Evening: (213)532-2123.

IBM & Compatibles Users Group-Ontario Area. For information call: (714)982-1270.

Kenny's Computer Club. Meetings: Each Saturday 8:00 A.M. 1133 Locust St. Apt. 19, Long Beach, CA. For those with an interest in graphics, DTP, Lotus, Autocad, games, databases and word processing.

Kern Independent User Group. Meetings: Write Kern Independent PC User Group, P.O. Box 2780, Bakersfield, CA 93303.

Long Beach IBM Users Group. Meetings: 3rd Tuesdays. 7 PM, Woodruff Medical Plaza, 3816 Woodruff Ave., Room A, Long Beach. Contact: Jim Wells. Call: (213)439-7114.

Mid-Wilshire PC User Group. Meeting: 2nd Thursdays, Conference Room of Forty Plus, 3450 Wilshire Boulevard, Suite 510, Los Angeles. Call: Robert, (818)790-5884.

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818)794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

Orange Coast IBM PC User Group. Meetings: last Sat. 9 AM Science Hall, Orange Coast College, Costa Mesa, CA.

Orange County IBM PC Users Group. Meetings: 2nd Thursdays 7:30 PM. Bradford Retirement Community Center, 1180 N. Bradford, Placentia. Meetings feature guest speakers on hardware and software topics related to the interest of our members. Other activities include sharing tips and problems, access to club library and a club newsletter. Call: Mike Lyons, 2114 W. LaPalma, Anaheim, CA 92801. (714)774-3236.

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Saddleback College IBM-PC Users Group. Meetings: 3rd Sat. Room 210, Business and General Science Building, Saddleback College, Mission Viejo. Call Susan Gordon at (714)582-4650.

South Bay Users Group (SBUG). Meetings: 1st Sun. Mercury Savings, Long Beach, CA.

South County PC Users Group. Meetings: 3rd Sat. 9 AM Great American Savings, 23688 El Toro Rd., El Toro, CA.

Technical Users Group (TUG-NET). Meetings: Call for info (818)882-6045. BBS (818)882-6045.

The Foothill Computer Club. Meetings: 1st Wednesdays, 6:30 pm, Glendale Federal Bank, 2350 Honolulu, Montrose. Call: (818)790-6672.

The IBM & Compatibles User Group (ICUG). Meetings: 4th Thurs. 6:30 PM or 7:30 CAL Lutheran Univ., 60 W. Olsen Rd., Thousand Oaks. Group is 5 yrs. old & has 150 members Meetings begin at 6:30 for beginners, 7:30 regular members.

The Southern California K-Man Users Group. Meetings: 1st Wednesday, 7:00 P.M., Laventhol and Horwath, Executive Conference Room, 7th Floor, 3699 Wilshire Blvd., LA. Demo of the month features new software and hardware.

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Valley Computer Club—IBM. Meetings: 1st Wednesdays, 7 pm, Burbank Bd. of Realtors Bldg., 2006 W. Mangolia, Burbank. Call: Wes Arnold, (213)221-4433.

VICUG (Valley IBM/Compatible Users Group). Meetings: 4th Fridays, 7:30 pm, Mercury Savings Bank, 14801 Ventura Blvd., Sherman Oaks. Call: Harry Tischler, (818)997-6000.

VICUG–DTP (Valley IBM/Compatibles Users Group). Meetings: 7:30–10:00 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818)997-6000.

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California State University Macintosh Users Group. Meetings: California State University, Long Beach.

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LAMG (Los Angeles Macintosh Group). Meetings: Call (213)278-LAMG or write 12021 Wilshire Blvd. #349, Los Angeles, CA 90025.

MacValley. Meetings: 3rd Tues. 7:30 PM Burbank High School Cafeteria at Burbank Blvd. and Third St. Call David Lagerson, (818)998-5546or write P.O. Box 4279, Burbank, CA 91503.

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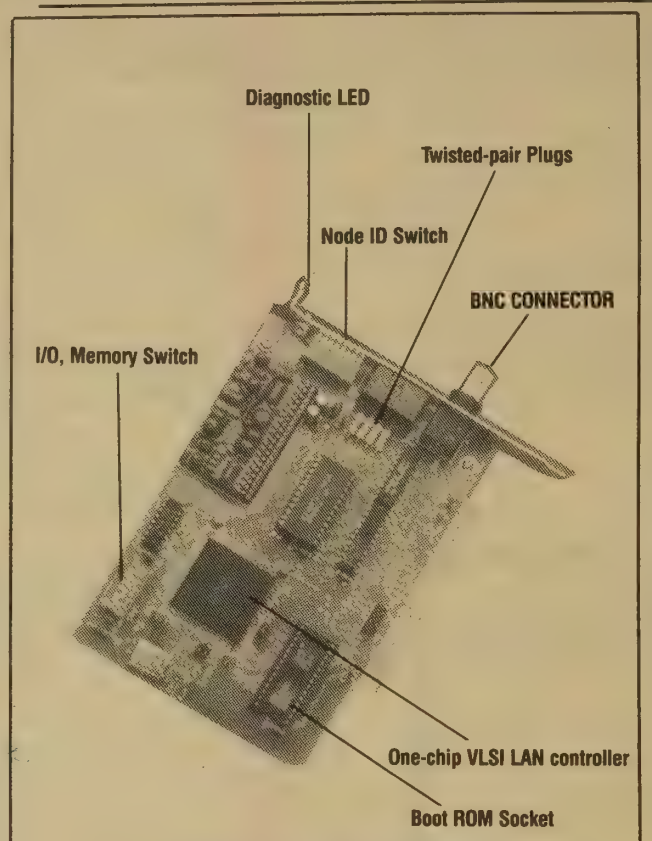

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San Gabriel Valley Macintosh Users Group. Meetings: 1st Thursdays, 7:30 pm, Pasadena City Library, 285 E. Walnut. (213)684-4266.

SBAMUG (South Bay Apple Mac User Group) Meetings: Last Wednesday of each month, 7:30 PM, Ticor Title, 4240 Artesia Blvd., Torrance. Call (213)316-7738.

Santa Barbara Macintosh Users Group. Meetings: First Tuesdays, @ 7 PM, Goleta Library. Publishes a newsletter with reviews, offers advice, support for Mac users, discounts at local dealers. Call: Morris Herman, 987-5511, x 2083.

West Orange County Macintosh Users Group (WOCMUG). Meetings: Last Tuesday. F & M Bank in Rossmore Center, Orange County, CA.

Whittier Area Mac Users Group. Meetings: 2nd Saturdays, 10 am, Granada Heights Friends Church, 11818 S. La Mirada Blvd., Rm. C-21. (213)947-2447.

NETWARE

Orange County Network Users Group (OCNET). Meetings: 2nd Tues. Wyle Labs, Irvine CA. Open to users, consultants, all interested in NETWARE. Call Mark at (714)955-0616.

Netware User Group Los Angeles (LOSNET). Meetings: 2nd. Wednesdays. Welcomes consultants, CPA's, dealers and users interested in sharing information on NETWARE and related products. Call Fane, (213)452-1335. 2716 Ocean Park Blvd, Santa Monica 90405.

OPEN SYSTEMS

Open Systems Accounting, So. Cal Users Group (OSASCUG). Meetings: 4th Wed. Wyle Labs, Irvine, CA. Users of Open Systems, Altos Accountant, CADO, & Rexon accounting software. Open to end users, dealers and consultants. Call Mark at (714)955-1724.

OSAS Systems Users Group Los Angeles (OSASUGLA). Meetings: 1st Wednesdays. Welcomes consultants, CPA's, dealers, users and QI's interested in sharing information on OSAS and related products. Call Fane, (213)452-1335. 2716 Ocean Park Blvd., Santa Monica 90405.

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R:BASE

Law Enforcement R:BASE Users Group. Meetings: Online. Available through the Safetynet Forum on CompuServe. Monthly newsletter for those without a modem. Users share tips and techniques. The group acts as a clearing house for PD and shareware law enforcement applications. To join, officers must leave a private message in CompuServe's online Safetynet Forum.

TANDY/RADIO SHACK

Los Angeles - Wilshire Color Computer Users' Group. Meetings: 2nd Sat. 12:30-5:30 PM Felipe de Neve Library's Comm. rm., 2820 W. 6th St., LA, CA.

South Bay Users Group (SBUG). Meetings: 3rd. Fri. Mercury Savings, 22939 Hawthorne Blvd., Torrance, CA.

TEXAS INSTRUMENTS

Brea 99'ers User Group. Meetings: 1st Mondays, 7:30 pm, Mercury Savings 1001 E. Imperial Blvd., La Habra, CA. (714)871-3405.

LA 99er Computer Group, 4th Wednesdays, @ 7:15 PM, Torrance Public Library, Torrance Blvd. @ Madronna., Call: Teresa Masters, (213)271-6930.

San Fernando Valley TI-99/4A User Group. Meetings: 2nd Wed. 7:30 PM Doctor's Conf. Rm., Sherman Oaks Hospital, 4929 Van Nuys Blvd. Call for info: (805)379-2937. Or write: SFV 99ers, 633 Hollyburne Ln., Thousand Oaks, CA 91360.

TI Professional. Call (213)397-9668.

TI Users Group of Orange County. Meetings: 3rd Thurs. Peek Funeral Home, 7801 Bolsa Ave., Westminister. Call 633-7317.

TIMEX/SINCLAIR

Timex-Sinclair Users Group. Meetings: 3rd Mon. 7 PM 11828 Jefferson Blvd., Culver City, CA.

Timex-Sinclair. Meetings: Call John W. Petersen (213)545-9581 or George Kuby at (213)551-9454. BBS: Grey Matter (213)971-6260.

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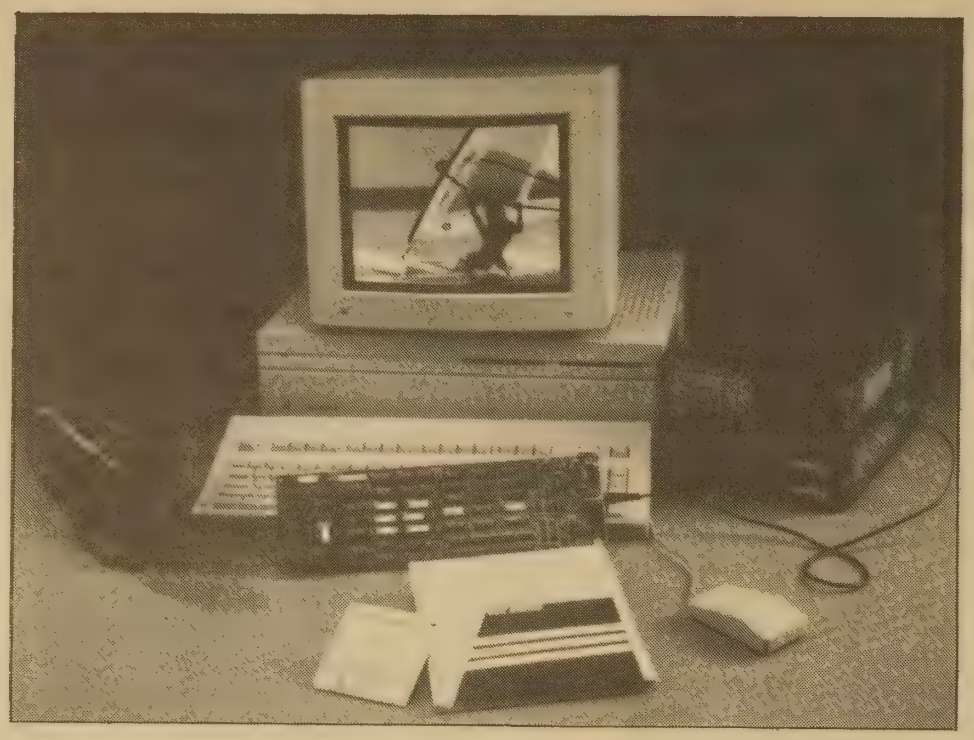
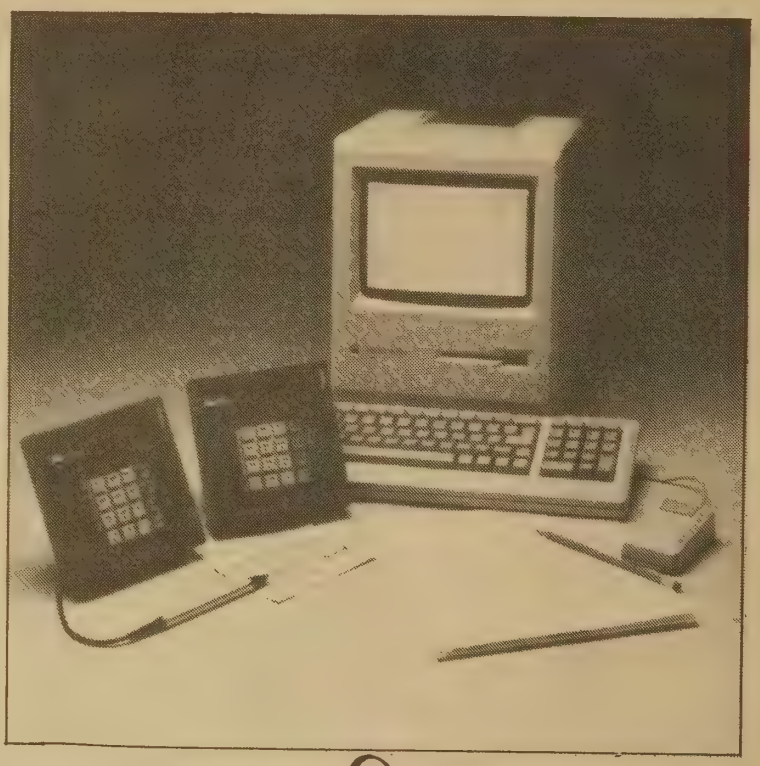


New QuickCapture Lowers Cost Of Real-Time Frame Grabbing

QuickCapture is a new frame grabber board and software package offering 640 X 480 square-pixel resolution, 64 gray levels, cable, and several advanced image processing functions including editing, enhancing, and analyzing images. QuickCapture provides a low-cost alternative to Data Translation's 256 gray-level predecessor. QuickCapture "grabs" images from ordinary video cameras, VCRs, and still-video devices in real time (1/30 second). Once captured, images can be processed, enhanced, and analyzed. They can then be displayed, printed, or exported as TIFF, PICT, DT-IRIS, RIFF, and EPSF files for use in draw, paint, database, or page-layout applications. You must have at least a Mac II to use QuickCapture. ($995) Data Translation, 100 Locke Drive, Marlboro, MA 01752-1192. (508)481-8620.

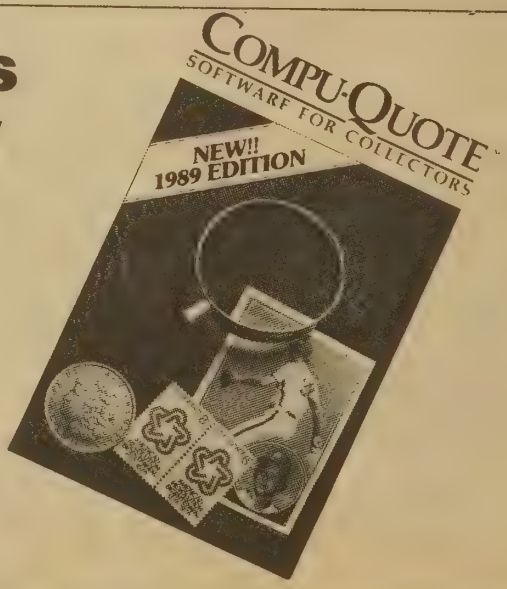
Time And Material Collection System

Information Management Systems has released its Productivity Analysis System, a local area network system of up to 96 collection terminals. The system is used to collect employee time and attendance, job labor, material resources, and company activity. PAS uses bar code technology, minimizing errors usually associated with key entries, to capture raw data (real-time or buffered) scanned by employees via bar code menus. With buffered terminals, the host computer can collect information and remain free for other applications. The system is easy to use and eliminates manual computations of employee time and handwritten job activity for job costing. Data is exported to other PCs or mainframes; file backup and network updating is automatic. Four software environments allow for Setup, Data Collection, Report Writing, and Job Status. IMS uses a low-cost data collection terminal that features a bar code wand, manual key pad, mag-stripe reader, and a 16 -character digital readout providing the user with operational feedback. Optional configurations include laser wands, printers, and auto discriminating wands. A Macintosh Plus with a hard drive, or better, is required. Information Management Systems, 3684 Forest Park Blvd., St. Louis, MO 63108. (314)652-6715.



Software For Collectors Offered By Compu-Quote

Compu-Quote is a company that specializes in software for collectors. It currently markets three types of collectors software: *Coins/Plus*, *Stamps World*, and *Card/Fax*. These applications feature a built-in database containing complete descriptions and recent market prices for items in each of the collectibles' areas. In addition to inventory value information, easy-to-generate reports give collectors the date and price of items bought and sold, profit percentage, and a wish list of items needed to complete a collection. The programs automate the bookkeeping process for investment tracking, collection control, tax, insurance, and estate planning purposes. Annual Market Value Update Disks for each program can be ordered for $25 for the first version and $15 for each additional version. Compu-Quote, 6914 Berquist Ave., Canoga Park, CA 91307. (818)348-3662.



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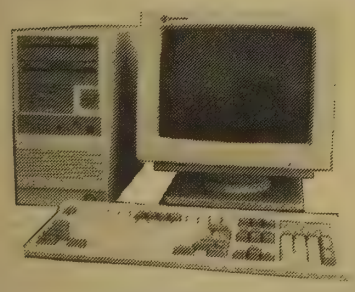

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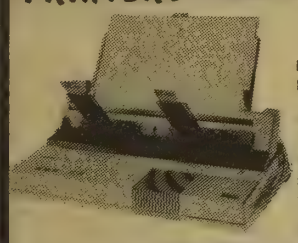

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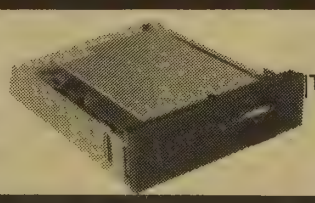

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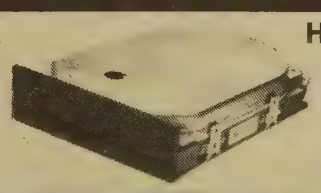

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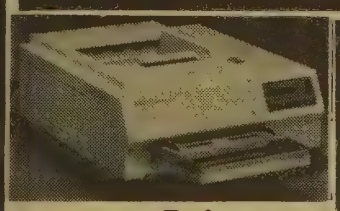

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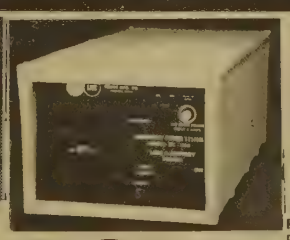

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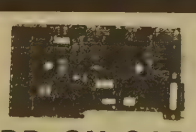

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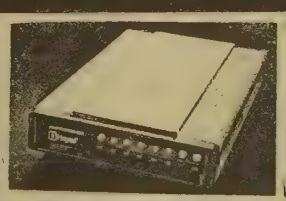

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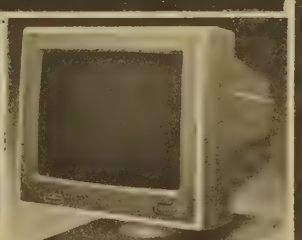

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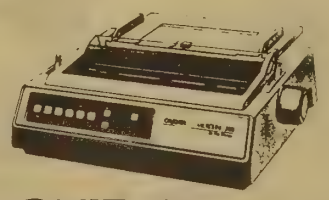

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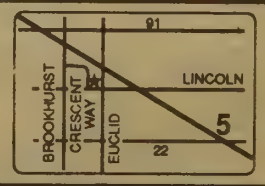

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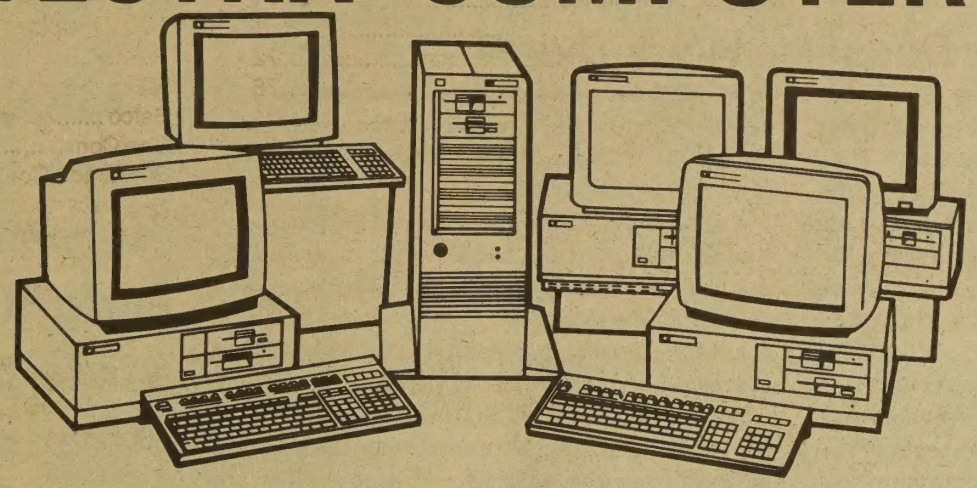

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The Modern Computer Dealer And The Age Of Consent

Would You Let Your Daughter Work There?

This is the year of the computer dealer. The "new" computer dealer, it seems. My favorite computer stores have long since been out of business. They went out of business once they began to listen to the experts telling them that they weren't making enough money. They were told to get rid of the tire kickers and kids and anyone suspected of wanting to buy mail-order software. They were told to stop catering to the customer.

So I wrote an article in *PC Magazine* suggesting that the computer stores ditch the new ideas that make the stores too slick, too put-offish, too depressing, too impersonal. My favorite anecdote is how the popular and money-making Byte Shop of Berkeley hired a consultant to modernize its operations. The first thing that happened was they changed the name of the store to Track Computers. This was after years and years of establishing itself as the Byte Shop. Also, the funk was out and slick was in. Within no time the place was broke and now there sits MicroWorld—an Atari store.

Anyway, after writing the *PC Magazine* column, I received a ton of letters pro and con concerning the management of today's computer stores. Some of the mail was pretty pathetic. So I waited to write another column. This time it was in *MacUser*.

I retold an experience in a Chicago ComputerLand where a ditzy saleswoman and some forgettable fellow refused to let me even touch a Mac when I asked if I could print out a one-page memo—this despite the fact that there was nobody in the store and they had nothing better to do. This was even after I offered to pay. It was irksome.

Unfortunately, this complaining has done no good. Readers say that I'm wrong or just persnickety. That is, until THEY go into a store! Still, this griping may be a lost cause.

Whatever the case, I was glad to see a memo from Alan Mandler, who discussed his experiences at an unnamed ComputerLand. I might add that there are some great ComputerLand stores—the Hokinsville, Kentucky store comes to mind. But like many franchiches where the parent doesn't ride herd on the offspring, you end up with too many stores that cause people to generalize. You can see how this process works in the next letter. Read it and pass along any horror stories you may have to me c/o *MicroTimes*.

John:

This message comes to you from my new NEC UltraLite computer recently purchased at ComputerLand—a chain of stores whose employees you criticized in a recent article.

Now, I don't normally buy at ComputerLand. I called every alternative in the Bay Area—from Winner's Circle on—and every mail order company in *PC Magazine*. If I would have endured the busy signals at 47th Street, I could have saved some bucks. But you know how rationalization is: I HAD to have it before my next trip.

Anyhow, as fate would have it, ComputerLand was the only store that had the units in stock. So, I put on my identity-concealing sunglasses and snuck into the store.

John, you might have been much too harsh in your judgments about store personnel. After all, I think an intensive training at PSU (Pacific Stereo University) provides invaluable experience. The parallels between computer and stereo sales are endless. For example, stereos are battery or AC powered, and so are some computers. Stereos sit on shelves around the store, and so do some computers. They both have price tags when the price is good. They both record on magnetic media and can read CDs. Need I go further?

As a matter of fact, John, I was privy to some very technical discussions that took place between the sales personnel and customers. For instance, one customer asked the difference between serial and parallel connections. "Well," said the crack saleswoman, gesturing with her hands at all times, "there's uh ... you know the signal ... one is for ... ummm printers ... and the other is used for, well you know..."

The customer, nodding throughout, attempted to interpret the sales lady's hand gesturing, and interjected, "You mean one has the square connector and the other one is round?"

The sales person paused, smugly looked at the customer, waved her finger at him while shaking her head up and down, and said, "Exactly!"

I had to turn away.

Of course, on the other side of the store was ComputerLand's fashion statement: you know, the kind of guy who believed the clothing store mannequin. During my two-and-a-half-hour stay, his sweater, which I believe was steamed into position onto his shoulders, with its sleeves permanently starched into a simple knot, never moved. The shirt was fluorescent pink. The top three buttons were undone. The chains were gold. The socks were absent. The intelligence was where the socks were. There was even less substance. Oh yeah, and his hair was slicked into a "mussed up" position. This is what I look for from all computer salesman: the look that inspires confidence, the look that says, "Entrust me with a several-thousand-dollar decision." Listening to this guy talk was really frightening, especially when he started laughing about accidentally erasing a customer's files. These things happen, I suppose.

One should wonder why I was in a ComputerLand long enough to witness such things. Once again, rationalization is a powerful force. I needed that computer. I'd like to say that this recent experience was a lesson, but only time will tell.

Since the store didn't have the NEC disk drives, since my PC was on loan, and since my Mac II would do me no good, I needed to transfer software from a store PC onto the NEC. After an hour and a half of "technical assistance" from the store's "technician," I asked if I could do it myself. I had never used *LapLink* or the NEC but something told me my lack of experience would put me a couple of notches ahead.

After starting from scratch and successfully transferring the data, I left the store as quickly as possible. Once home, surrounded by the higher intelligence of my potted plants, I breathed deep, soothing breaths of relief. I then opened up my NEC, turned on the power, and discovered that none of the information I loaded was there. The technician, despite the store's claim of having sold dozens of these units, neglected to activate the unit's backup memory. Silly me. I thought I could, at least, trust them to unpack everything and get started.

Wrong!

Regards,
Alan

"John, you might have been much too harsh in your judgments about store personnel. After all, I think an intensive training at PSU (Pacific Stereo University) provides invaluable experience. The parallels between computer and stereo sales are endless. For example, stereos are battery or AC powered, and so are some computers."

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser, *considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

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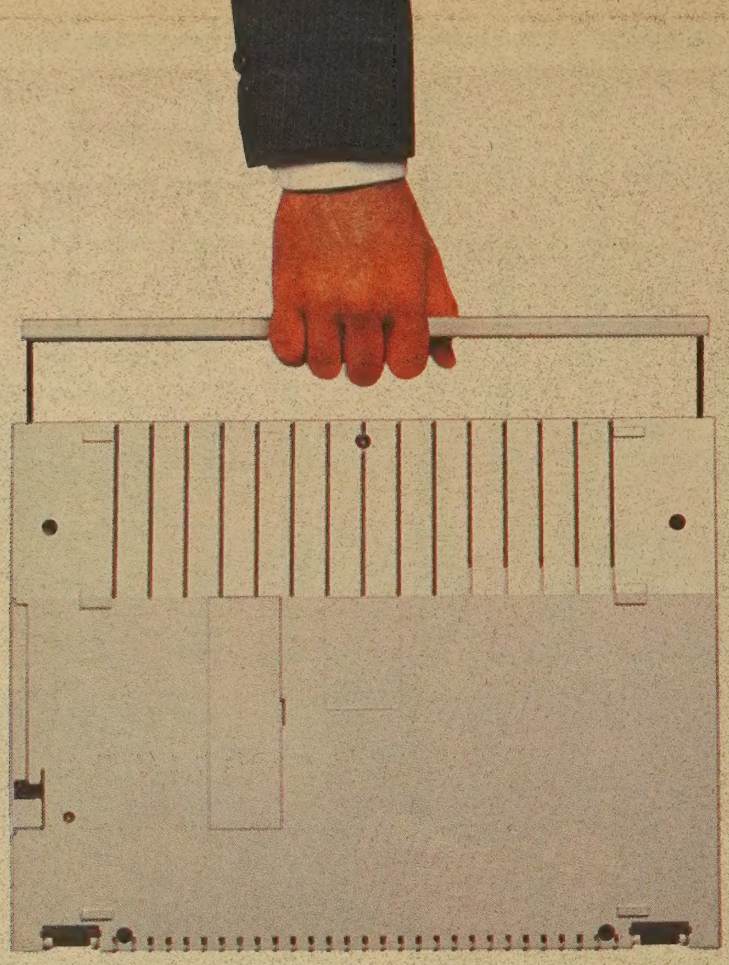
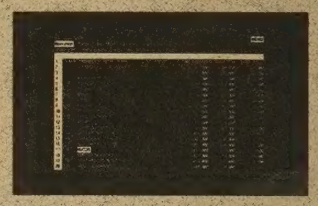


First there were desktop computers. Then came the laptops. Each offered something that the other did not.

But now there's something that combines the best of both worlds. Because now there's a portable that's easy enough to take with you; yet powerful enough to double as your office computer.

You may say that sounds like a split personality. We say it sounds like the new Altima One.

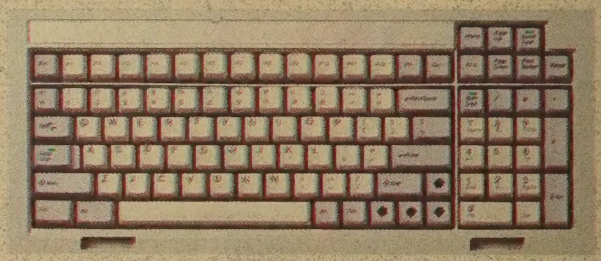


Altima One can run MS-DOS and OS/2 with ease. Plus it features an impressive 80286 microprocessor that speeds to a full 16 MHz, without ever gasping for breath.

Split personality.

What's more, Altima One *comes with* items that other manufacturers call options. Like a built-in 2400 baud modem. Or an optomechanical mouse with a compartment for storage. Or a PC compatible expansion slot.

Altima even remembered to give you more memory. Because with Altima One, you can expand from one megabyte to five.



Add to this the paper-white LCD backlit display; a full function 101-key detachable keyboard with numeric keypad; a 3½", 1.44 megabyte internal floppy disk drive; plus a 20 megabyte hard drive, and you'll soon realize why the Altima desktop/laptop is one heck of a computer. Or is it two?

altima

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